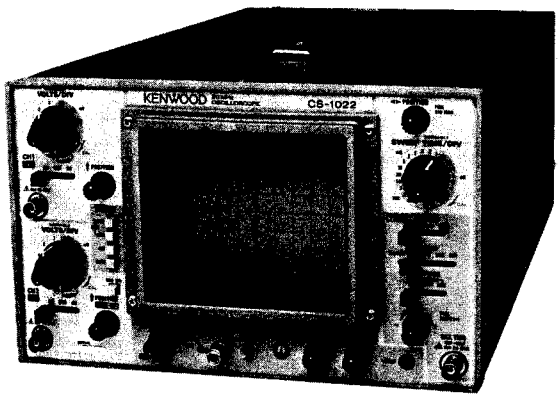
# SERVICE MANUAL

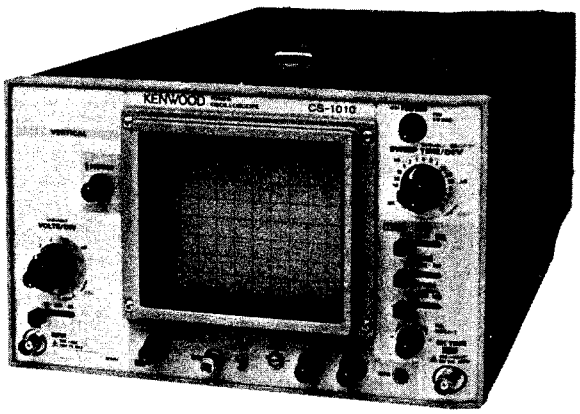
## CS-1022,CS-1021,CS-1012

**(DUAL TRACE OSCILLOSCOPE)**

## CS-1020,CS-1010

**(SINGLE TRACE OSCILLOSCOPE)**




KENWOOD

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**WARNING**

1. The following instructions are for use by qualified personnel only. To avoid electric shock, do not perform servicing other than contained in the operating instructions unless you are qualified to do so.

2. High voltage up to 6000 volts (for CS-1021, 1012, 1010, 2000 volts) dc is present when the oscilloscope is operating. Line voltage (100 to 240 VAC) is present on the power transformer, on-off switch, fuse holder, and line voltage selector any time the oscilloscope is connected to an ac power source, even if turned off. Always observe caution when the housing is removed from the unit. Contacting exposed high voltage could result in fatal electric shock.

**NOTE:**

The description of the dual-trace oscilloscope in this Service Manual is based on CS-1021.
The shaded parts cannot be applied to CS-1021.

# SPECIFICATIONS

| | CS-1022 | CS-1021 | CS-1012 | CS-1020 | CS-1010 |
|---|---|---|---|---|---|
| **CRT** | 150FTM31 | 150GTM31A | 150GTM31A | 150FTM31 | 150GTM31A |
| Acceleration Voltage | 6 kV | 2 kV | 2 kV | 6 kV | 2 kV |
| Display Area | 8 × 10 div (1 div = 10 mm) | | | | |
| Type | Rectangular, with internal graticule | | | | |
| **VERTICAL AXIS** | **CH1 and CH2** | | | — | |
| Sensitivity | 1 mV/div to 5 V/div, ±3% | | | | |
| Attenuator | 12 steps, 1 mV/div to 5 V/div in 1-2-5 sequence.<br>Vernier control for fully adjustable sensitivity between steps. | | | | |
| Input Impedance | 1 MΩ ±2%, approx 35pF | | | | |
| Frequency Response<br>2 mV/div to 5 V/div<br><br>1 mV/div | DC; DC to 20 MHz, −3 dB<br>AC; 5 Hz to 20 MHz, −3 dB<br>DC; DC to 10 MHz, −3 dB<br>AC; 5 Hz to 10 MHz, −3 dB | | DC; DC to 10 MHz, −3 dB<br>AC; 5 Hz to 10 MHz, −3 dB<br>DC; DC to 7 MHz, −3 dB<br>AC; 5 Hz to 7 MHz, −3 dB | DC; DC to 20 MHz, −3 dB<br>AC; 5 Hz to 20 MHz, −3 dB<br>DC; DC to 10 MHz, −3 dB<br>AC; 5 Hz to 10 MHz, −3 dB | DC; DC to 10 MHz, −3 dB<br>AC; 5 Hz to 10 MHz, −3 dB<br>DC; DC to 7 MHz, −3 dB<br>AC; 5 Hz to 7 MHz, −3 dB |
| Rise Time | 17.5 nsec or less (20 MHz)<br>35 nsec or less (10 MHz) | | 35 nsec or less (10 MHz)<br>50 nsec or less (7 MHz) | 17.5 nsec or less (20 MHz)<br>35 nsec or less (10 MHz) | 35 nsec or less (10 MHz)<br>50 nsec or less (7 MHz) |
| Crosstalk | −40 dB minimum | | | — | |
| Operating Modes | CH1; single trace<br>CH2; single trace<br>ADD; CH1 + CH2 added display<br>ALT; two waveforms alternating<br>CHOP; two waveforms chopped | | | — | |
| Chop Frequency | Approx. 250 kHz | | | — | |
| Channel Polarity | Normal or inverted, CH2 only inverted | | | — | |
| Maximum Input voltage | 500 Vp-p or 250 V (DC + AC peak) | | | | |
| Non-Distorted Maximum Amplitude | More than 8 div, DC to 20 MHz | More than 6 div, DC to 20 MHz | More than 6 div, DC to 10 MHz | More than 8 div, DC to 20 MHz | More than 6 div, DC to 10 MHz |
| **HORIZONTAL AXIS** | **(input thru CH2, × 10 MAG not included)** | | | **(× 10 MAG not included)** | |
| Operating Mode | With TRIG MODE switch, X-Y operation is selectable.<br>CH1; Y axis<br>CH2; X axis | | | With TRIG MODE switch, X-Y operation is selectable.<br>VERT. INPUT; Y axis<br>EXT TRIG INPUT; X axis | |
| Sensitivity | Same as vertical axis (CH2) | | | 100 mV/div | |
| Input Impedance | Same as vertical axis (CH2) | | | 1 MΩ ±2%, approx. 32pF | 1 MΩ ±2%, approx. 35 pF |
| Frequency Response | DC; DC to 1 MHz, −3 dB<br>AC; 5 Hz to 1 MHz, −3 dB | DC; DC to 500 kHz, −3 dB<br>AC; 5 Hz to 500 kHz, −3 dB | | DC; DC to 1 MHz, −3 dB | DC; DC to 500 kHz, −3 dB |
| X-Y Phase Difference | 3° or less at 100 kHz | 3° or less at 50 kHz | | 3° or less at 100 kHz | 3° or less at 50 kHz |
| Maximum Input Voltage | Same as vertical axis (CH2) | | | 50 V (DC + AC peak) | |
| **SWEEP** | | | | | |
| Type NORM | Triggering sweep | | | | |
| AUTO | Sweep free runs in absence of trigger | | | | |

# SPECIFICATIONS

| | CS-1022 | CS-1021 | CS-1012 | CS-1020 | CS-1010 |
|---|---|---|---|---|---|
| Sweep Time | 0.2 μs/div to 0.5 s/div, ±3% in 20 ranges, in 1-2-5 sequence. Vernier control provides fully adjustable sweep time between steps. | 0.5 μs/div to 0.5 s/div, ±3% in 19 ranges, in 1-2-5 sequence. Vernier control provides fully adjustable sweep time between steps. | | 0.2 μs/div to 0.5 s/div, ±3% in 20 ranges, in 1-2-5 sequence. Vernier control provides fully adjustable sweep time between steps. | 0.5 μs/div to 0.5 s/div, ±3% in 19 ranges, in 1-2-5 sequence. Vernier control provides fully adjustable sweep time between steps. |
| Sweep Magnification | ×10 (ten times) ±5% | | | | |
| Linearity | ±3% all ranges, ±5% on 0.2 μs/div range at ×10 magnification. | | | | |
| **TRIGGERING** | | | | | |
| Internal Sync | V. MODE; Triggered by input signal selected by vertical MODE setting.<br>CH1; Triggered by CH1 signal<br>CH2; Triggered by CH2 signal<br>LINE; Triggered by line voltage | | | INT; Triggered by vertical input signal<br>LINE; Triggered by line voltage | |
| External Sync | EXT; Triggered by signal applied to EXT TRIG INPUT jack | | | | |
| External sync Input Impedance | 1 MΩ, ±2% approx 32pF | 1 MΩ, ±2% approx 35pF | | 1 MΩ, ±2% approx 30pF | |
| Maximum External Trigger Voltage | 50 V (DC+AC peak) | | | | |
| Coupling | AC, VIDEO FRAME, VIDEO LINE | | | | |
| Tigger Sensitivity | | | | | |

| | FREQ. RANGE | INT | EXT |
|---|---|---|---|
| AUTO | 20Hz to 20MHz | 1div | 0.1Vp-p |
| NORM | 10Hz to 20MHz | 1div | 0.1Vp-p |
| VIDEO | FRAME, LINE | 1div | 0.1Vp-p |

| | FREQ. RANGE | INT | EXT |
|---|---|---|---|
| AUTO | 20Hz to 20MHz | 1div | 0.2Vp-p |
| NORM | 10Hz to 20MHz | 1div | 0.2Vp-p |
| VIDEO | FRAME, LINE | 1div | 0.2Vp-p |

| | FREQ. RANGE | INT | EXT |
|---|---|---|---|
| AUTO | 20Hz to 10MHz | 1div | 0.1Vp-p |
| NORM | 10Hz to 10MHz | 1div | 0.1Vp-p |
| VIDEO | FRAME, LINE | 1div | 0.1Vp-p |

| | FREQ. RANGE | INT | EXT |
|---|---|---|---|
| AUTO | 20Hz to 20MHz | 1div | 0.1Vp-p |
| NORM | 10Hz to 20MHz | 1div | 0.1Vp-p |
| VIDEO | FRAME, LINE | 1div | 0.1Vp-p |

| | FREQ. RANGE | INT | EXT |
|---|---|---|---|
| AUTO | 20Hz to 10MHz | 1div | 0.1Vp-p |
| NORM | 10Hz to 10MHz | 1div | 0.1Vp-p |
| VIDEO | FRAME, LINE | 1div | 0.1Vp-p |

| | | | | | |
|---|---|---|---|---|---|
| **PROBE ADJ. VOLTAGE** | 0.5 V, ±6%, square wave, positive polarity, approx 1 kHz | | | | |
| **INTENSITY MODULATION** | | | | | |
| Sensitivity | TTL compatible<br>Positive voltage increases brightness.<br>Negative voltage decreases brightness. | | | | |
| Input Impedance | Approx 10 kΩ | | | | |
| Usable Frequency Range | DC to 2 MHz | DC to 1 MHz | | DC to 2 MHz | DC to 1 MHz |
| Maximum Input Voltage | 50 V (DC+AC peak) | | | | |
| **VERTICAL AXIS SIGNAL OUTPUT** | CH1 SIGNAL OUTPUT | — | CH1 SIGNAL OUTPUT | VERTICAL SIGNAL OUTPUT | |
| Output Voltage | Approx. 50mV/div (50 Ω load) | — | Approx 50 mV/div (50 Ω load) | | |
| Output Impedance | Approx 50 Ω | — | Approx 50 Ω | | |
| Frequency Response | 100 Hz to 20 MHz, −3 dB (50 Ω load) | — | 100 Hz to 10 MHz, −3 dB (50 Ω load) | 100 Hz to 20 MHz, −3 dB (50 Ω load) | 100 Hz to 10 MHz, −3 dB (50 Ω load) |
| **TRACE ROTATION** | Electrical, adjustable from front panel | | | | |
| **POWER REQUIREMENT** | AC 100/120/220/240 V ±10% 50/60 Hz | | | | |
| Power Consumption | Approx 43 W | Approx 39 W | Approx 41W | Approx 38W | Approx 36W |
| **DIMENSIONS** | **( ) dimensions include protrusions from basic outline dimensions.** | | | | |
| Width | 260 mm (260 mm) | | | | |
| Height | 160 mm (180 mm) | | | | |
| Depth | 400 mm (460 mm) | | | | |

# SPECIFICATIONS

| | CS-1022 | CS-1021 | CS-1012 | CS-1020 | CS-1010 |
|---|---|---|---|---|---|
| **WEIGHT** | Approx. 8.8 kg | Approx. 8.4 kg | | | Approx. 8.1 kg |
| **ENVIRONMENT** | | | | | |
| Operating Temperature and Humidity for Guaranteed Specifications | 0°C to 40°C, 85% maximum RH | | | | |
| Full Operating Temperature and Humidity | 0°C to 50°C, 90% maximum RH | | | | |
| **ACCESSORIES** | | | | | |
| Probe | 2 | | | 1 | |
| Instruction Manual | 1 | | | | |
| Replacement Fuse 0.8 A | 2 | | | | |
| 0.5 A | 2 | | | | |

■ Circuit and rating are subject to change without notice due to developments in technology.

**STANDARD ACCESSORIES INCLUDED**

Probe (PC-20) .....Y87-1840-00
- Attenuation.....1/10, 1/1
- Input Impedance
  - 1/10 .....10 MΩ, 18pF or less
  - 1/1 .....1 MΩ, 100pF or less

Instruction Manual.....B50-7570-00
Replacement Fuse
- 0.8 A .....F05-8015-05
- 0.5 A .....F05-5013-05

**OPTIONAL ACCESSORIES**

Probe Pouch (MC-78).....Y87-1600-00
Service Manual .....B51-1033-10

# SPECIFICATIONS

## CRT 150FTM 31 SPECIFICATIONS (150GTM31A)

**Screen and Shape**

Dimensions;

| | |
|---|---|
| Overall length; | 330 mm max. (355mm max) |
| Face plate dimensions; | 149.3±3 mm max. (149±3 mm) |
| Screen shape; | Rectangular flat face, internal graticule, non-metal back |
| Deflection and focusing system; | Electrostatic deflection, electrostatic focusing and post-deflection acceleration (150FTM 31 only) |
| Color; | Green |
| Persistence; | Medium short |
| Useful display area | Y axis.....80 mm<br>X axis.....100 mm |

**Heating**

| | |
|---|---|
| Heater voltage | 6.0 V (6.3 V) |
| Heater current | 75 mV (95 mA) |
| **Weight** | 900 gr (1000 gr) |

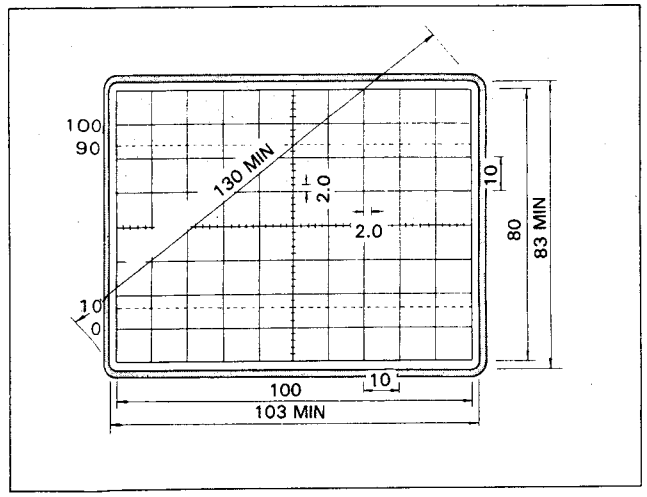



**Fig. 1 150GTM31A 150FTM31 Graticule**

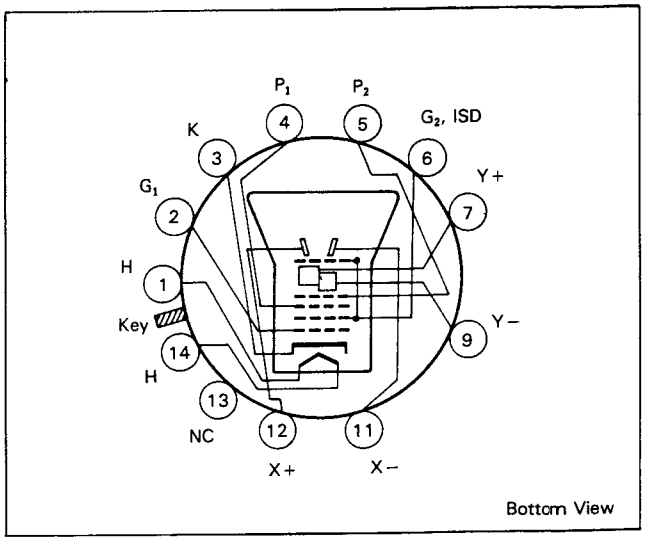



**Fig. 2 150GTM31A Basing**

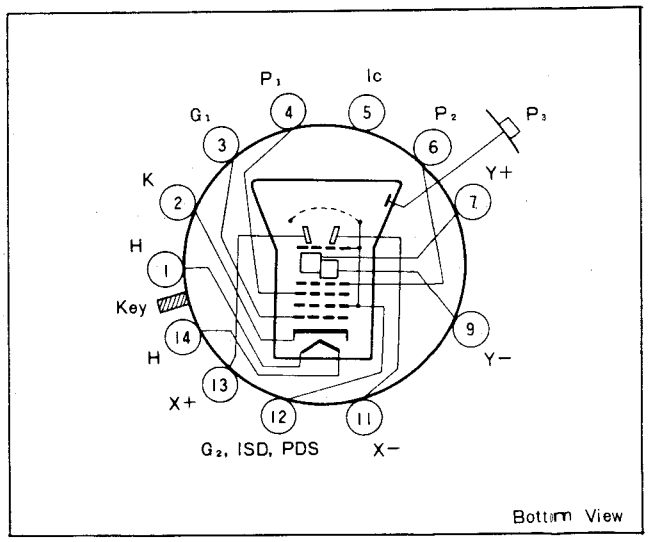



**Fig. 3 150FTM31 Basing**

# SAFETY

## SAFETY

Before connecting the instrument to a power source, carefully read the following information, then verify that the proper power cord is used and the proper line fuse is installed for power source. The specified voltage is shown at the left side of the power cord on the rear panel. If the power cord is not applied for specified voltage, there is always a certain amount of danger from electric shock.

**Line voltage**

This instrument operates using ac-power input voltages that 100/120/220/240 V at frequencies from 50 Hz to 60 Hz.

**Power cord**

The ground wire of the 3-wire ac power plug places the chassis and housing of the oscilloscope at earth ground. Do not attempt to defeat the ground wire connection or float the oscilloscope; to do so may pose a great safety hazard. The appropriate power cord is supplied by an option that is specified when the instrument is ordered.

The optional power cords are shown as follows in Fig. 4.

**Line fuse**

The fuse holder is located on the rear panel and contains the line fuse. Verify that the proper fuse is installed by replacing the line fuse.

**Voltage conversion**

This oscilloscope may be operated from either a 100 V to 240 V, 50/60 Hz power source. Use the following procedure to change from 100- to 240 volt operation or vice versa.

1. Remove the top section of case.
2. Unplug the leadwire of the voltage selector P5 located on the connection unit (X77-1260).
3. Reinsert it for appropriate voltage range.
4. Replace fuse F 1 with a fuse of appropriate value, 0.8 amp for 100 VAC to 120 VAC operation, 0.5 amp for 220 VAC to 240 VAC operation.
5. When performing the reinsertion of leadwire for the voltage conversion the appropriate power cord should be used. (See Fig. 4.)

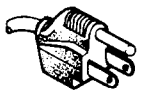
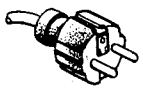
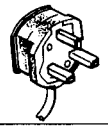
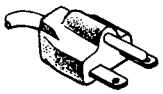
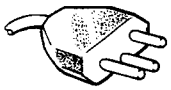
| Plug configuration | Power cord and plug type | Factory installed instrument fuse | Line cord plug fuse | Parts No. for power cord and plate |
|---|---|---|---|---|
|  | North American<br>120 volt/60 Hz<br>Rated 15 amp<br>(12 amp max; NEC) | 0.8 A, 250 V<br>Fast blow<br>AGC/3AG | None | Cord:<br>E30-1854-05<br>Plate:<br>J21-2977-04 |
|  | Universal Europe<br>220 volt/50 Hz<br>Rated 16 amp | 0.5 A, 250 V<br>Fast blow<br>5 x 20 mm | None | Cord:<br>E30-1852-05<br>Plate:<br>J21-2973-04 |
|  | U.K.<br>240 volt/50 Hz<br>Rated 13 amp | 0.5 A, 250 V<br>Fast blow<br>5 x 20 mm | 0.5 A<br>Type C | — |
| | Australian<br>240 volt/50 Hz<br>Rated 10 amp | 0.5 A, 250 V<br>Fast blow<br>5 x 20 mm | None | Cord:<br>E30-1853-05<br>Plate:<br>J21-2972-04 |
|  | North American<br>240 volt/60 Hz<br>Rated 15 amp<br>(12 amp max; NEC) | 0.5 A, 250 V<br>Fast blow<br>AGC/3AG | None | — |
|  | Switzerland<br>240 volt/50 Hz<br>Rated 10 amp | 0.5 A, 250 V<br>Fast blow<br>AGC/3AG<br>5 x 20 mm | None | — |

**Fig. 4 Power Input Voltage Configuration**

# CIRCUIT DESCRIPTION CS-1021, CS-1022, CS-1012

## VERTICAL ATTENUATOR

The attenuators of channel 1 and channel 2 are mounted on two independent circuit board which are the same.
The vertical input signal coming to the BNC input receptacle enters a first- stage attenuator with path selected with the AC-GND-DC switch.
It then comes to one of the 1:1, 1:10, 1:100 attenuators which the vertical rotary switch selects before it enters the attenuator of the second stage. This attenuator consists of U1 and U2 and provides an attenuation sequence of 1-2-5.
For the ranges of 1, 2, and 5mV/div, an amplifier consists of U3 and Q2 - 4 is used. For the adjustment of step ATT balance, VR2 is used in the ranges of 10 mV/div or more.
For the ranges of 1, 2, 5mV/div, VR3 adjusts coarsely and VR4 does finely. VR2 and VR4 are accessible from the outside.
Trimmer TC 5 adjusts frequency response of the amplifier operating for ranges of 1, 2, and 5mV/div. It should be adjusted to obtain square wave and frequency response of the 10 mV/div range also in the other three ranges.

## VERTICAL AMPLIFIER

The signal which has passed the attenuators comes to a preamplifier consisting of U1 and Q2 - 4 (CH2 ; U101 and Q102 - 104). Variable resistor VR1 (101) provided for the preamplifier allows to vary vertical position.
The preamplifier output comes to not only the vertical mode selector but in CH1, the CH1 OUTPUT circuit consiting of Q6 - 8 from which it is sent to the outside via a 22 $\mu$F capacitor for AC coupling.
Another component of the preamplifier output comes to the base of Q5 (105) and after being selected with the TRIG SOURCE switch, passes through the emitter follower Q5 (105) over to a trigger amplifier which generates a trigger signal from the input. The channel 2 signal is used also as X-signal and VR102 adjusts offset for X POSITION centering.
The vertical mode switching circuit is a cascode amplifier comprising Q9 - 12 (107 - 110) whose outputs to Q13, 14 are controlled by two signals, CH1 - ENABLE and CH2 ENABLE, supplied from the vertical switching signal generator of the horizontal & high voltage unit.
Channel 2 is provided with the CH2 polarity inverter which comprises Q111, 112 and switched by switch S102.
VR104 allows to center during CH2 INVERT in relation to the condition during NORMAL.
Two cascode amplifiers of channel 1 and channel 2 of the vertical mode switching circuit are provided with trimmer capacitors TC101 (102) permitting adjustment of square wave and frequency response at high frequencies and semi-fixed variable resistor VR103 permitting to adjust channel 1 gain.
Since both channels are on during ADD, current is supplied to the vertical switching circuits from the circuits of Q113, 114 which are controlled by CH1-E and CH2-E signals. The vertical switching output is given not only to the vertical output amplifier but also to the base of Q115 from which it goes as the V MODE trigger signal to the trigger amplifier.
The output amplifier is a cascode amplifier comprising Q15 - 18 and provided with VR4 permitting CRT center adjustment, VR3 permitting operating level adjustment, VR5 permitting gain adjustment, and VR6 plus TC1, 2 permitting square wave and frequency response adjustment.

## TRIGGER AND SWEEP CIRCUITS

The trigger (or X-axis) signal coming from the vertical amplifier enters the trigger amplifier of Q101 - 104 with path selected by the TRIG SOURCE switch. During X-Y mode, the channel 2 signal passes Q117 to the horizontal output amplifier comprising Q118 and Q120 - 127.
During sweep mode, the trigger signal entering the trigger amplifier divides into AC and VIDEO signals. The VIDEO signal passes the video-sync signal separator which separates vertical and horizontal sync signals from the video signal. Then it comes to the TRIG COUPLING switch and appears, after shaped by a Schmitt circuit, as the clock signal of sweep control gate U102b.
The auto-sweep circuit comprising U101a, b, d and U103a checks for the presence of the output of U101c and performs free-run operation if the signal is absent and mode is AUTO.
The output of the sweep control gate is controlled by the auto sweep and Schmitt circuits. When Q116 turns off, the Miller integrator starts to charge at the speed which time-base C and R determine. SWEEP VARIABLE VR103 permits to vary sweep speed. The sweep stop circuit of Q113, 114 detects the output voltage of the Miller integrator and controls a gate to invert state and stop sweep.
The holdoff circuit Q119 determines when to stop sweep.
The sawtooth wave output of the Miller integrator is, with sweep speed controlled by VR104, sent to the horizontal output amplifier.
VR111 and TC101 permit sweep time adjustment respectively of 10 msec/div and 50 $\mu$sec/div ranges. VR106, 107 permit adjustment respectively of gain and center during × 10MAG mode. VR105 adjusts X-axis gain during X-Y mode.

## CRT CIRCUIT

U104a ANDs the $\overline{Q}$ output of sweep control gate U102b with the CHOP blanking signal of U104c, d to generate the blanking signal.
Its amplitude is controlled in Q128, 129 by voltage coming from the INTENSITY control before the signal is sent to the blanking amplifier of Q1, 2. After amplified in the blanking amplifier and high acceleration DC component regenerated by D4 - 7, the blanking signal applies to a grid of the CRT.
High voltages of 6 kV (for CS-1012, 2 kV) needed for trace in the CRT are generated by the DC - DC converter comprising T1 and Q3. Operational amplifier U1b performs

# CIRCUIT DESCRIPTION / BLOCK DIAGRAM

feedback to obtain high stability.

## POWER SUPPLY

The regulated power supply requires no adjustment.
+5, −15, and +15 V are generated by 3-terminal regulators. +100 and +140 V are stabilazed against line voltage fluctuation by feedback applied by an operational amplifier.

## CALIBRATION VOLTAGE

No adjustment is needed for the calibration voltage.
An oscillator composed of operational amplifier U1 generates a stable signal.

## VERTICAL FINAL AMPLIFIER (applied for CS-1021 only)

The output amplifier is a cascode amplifier and comprised Q15, 16 (V. AMP. X73-1490) and Q1, 2 (V. FINAL X73-1630). The buffer amplifier is comprised with Q3~6. This output amplifier is provided with VR4 permitting crt center adjustment, VR3 permitting operating level adjustment, VR5 permitting gain adjustment and VR6 plus TC1, 2 permitting square wave and frequency response adjustment.

CS-1021 (1022, 1012) BLOCK DIAGRAM

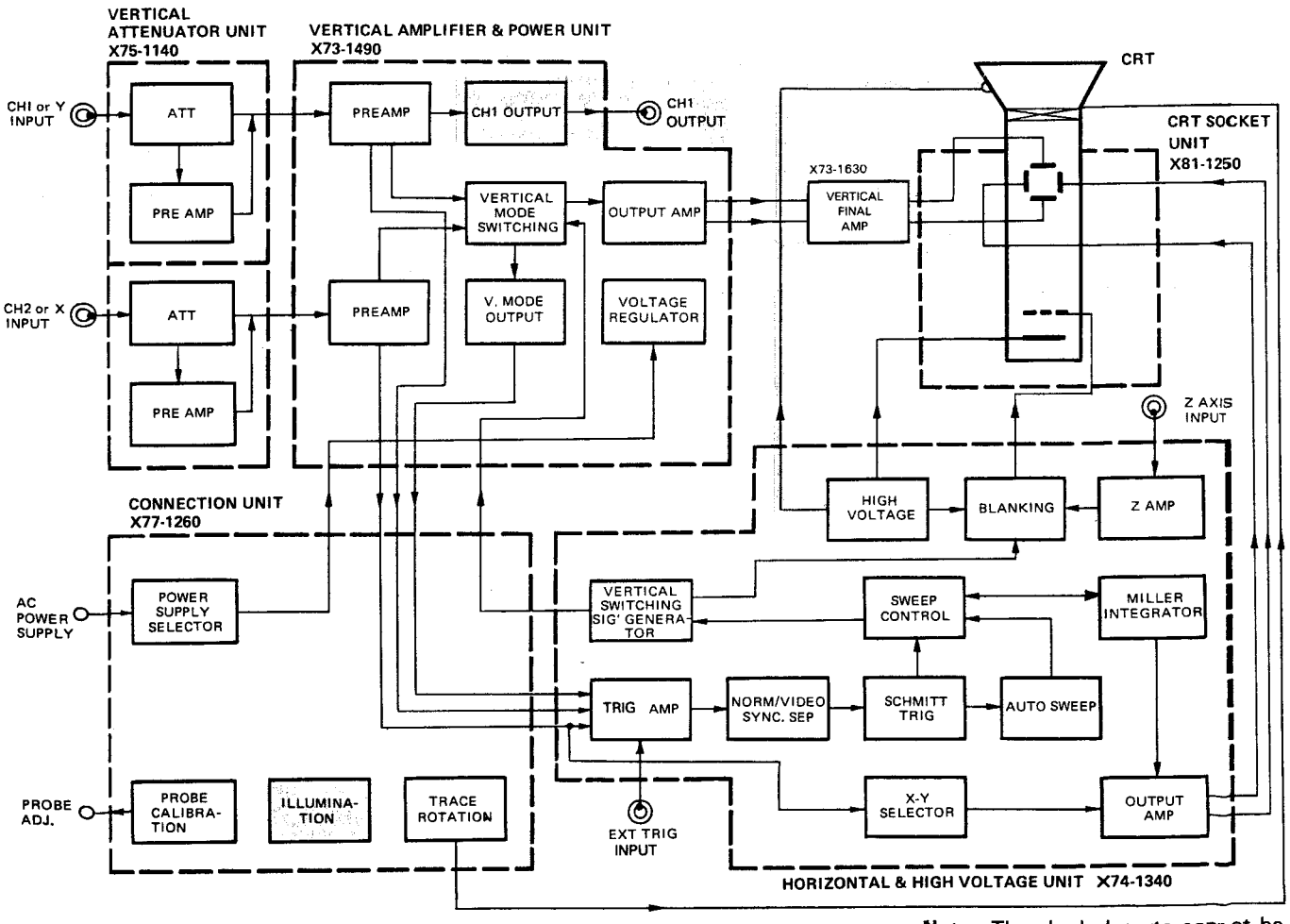



Fig. 5

**Note:** The shaded parts cannot be applied to CS-1021.

# CIRCUIT DESCRIPTION CS-1020, CS-1010

## VERTICAL ATTENUATOR

The vertical input signal coming to the BNC input receptacle enters a first- stage attenuator with path selected with the AG-GND-DC switch.
It then comes to one of the 1:1, 1:10, 1:100 attenuators which the vertical rotary switch selects before it enters the attenuator of the second stage. This attenuator consists of U1 and U2 and provides an attenuation sequence of 1-2-5.
For the ranges of 1, 2, and 5 mV/div, an amplifier consists of U3 and Q2 - 4 is used.
For the adjustment of step ATT balance, VR2 is used in the ranges of 10 mV/div or more. For the ranges of 1, 2, 5 mV/div, VR3 adjusts coarsely and VR 4 does finely. VR2 and VR4 are accessible from the outside.
Trimmer TC 5 adjusts frequency response of the amplifier operating for ranges of 1, 2, and 5 mV/div. It should be adjusted to obtain square wave and frequency response of the 10 mV/div range also in the other three ranges.

## VERTICAL AMPLIFIER

The signal which has passed the attenuators comes to a preamplifier consisting of U1 and Q2 - 4.
Variable resistor VR1 provided for the preamplifier allows to vary vertical position.
The preamplifier output comes to not only the vertical mode selector but in CH1, the VERT OUTPUT circuit consiting of Q6 - 8 from which it is sent to the outside via a 22 $\mu$F capacitor for AC coupling. Another component of the preamplifier output comes to the base of Q5 and after being selected with the TRIG SOURCE switch, passes through the emitter follower Q5 over to a trigger amplifier which generates a trigger signal from the input.
The second stage amplifier is a cascode amplifier comprising Q9 - 12 whose switched to differential signal and it is fed to emitter follower of Q13 and 14.
The cascode amplifier is provided with trimmer capacitor TC101 permitting adjustment of square wave and frequency response at high frequencies.
The signal from Q13 and 14 is fed to vertical output amplifier.
The output amplifier is a cascode amplifier comprising Q15 - 18 and provided with VR4 permitting CRT center adjustment, VR3 permitting operating level adjustment, VR5 permitting gain adjustment, and VR6 plus TC1, 2 permitting square wave and frequency response adjustment.

## TRIGGER AND SWEEP CIRCUITS

The trigger signal coming from the vertical amplifier enters the trigger amplifier of Q101 - 104 with path selected by the TRIG SOURCE switch. During X-Y mode, the signal applied to EXT TRIG input is X-signal which passes sweep X-Y selector consisting of S106, Q117, 130 and 131 and then applies to horizontal output amplifier comprising Q118 and Q120 - 127.
VR103a of X-Y selector adjusts X-axis gain coarsely and VR110 adjusts X-axis DC balance.
During sweep mode, the sync signal entering the sync amplifier divides into AC and VIDEO signals. The VIDEO signal passes the video-sync signal separator which separated vertical and horizontal sync signals from the video signal. Then it comes to the TRIG COUPLING switch and appears, after shaped by a Schmitt circuit, as the clock signal of sweep control gate U102b.
The auto-sweep circuit comprising U101a, b, d and U103a checks for the presence of the output of U101c and performs free-run operation if the signal is absent and mode is AUTO.
The output of the sweep control gate is controlled by the auto sweep and Schmitt circuits. When Q116 turns off, the Miller integrator starts to charge at the speed which time-base C and R determine. SWEEP VARIABLE VR103b permits to vary sweep speed. The sweep stop circuit of Q113, 114 detects the output voltage of the Miller integrator and controls a gate to invert state and stop sweep. The holdoff circuit Q119 determines when to stop sweep. The sawtooth wave output of the Miller integrator is, with sweep speed controlled by VR104, sent to the horizontal output amplifier.
VR111 and TC101 permit sweep time adjustment respectively of 10 msec/div and 50 $\mu$sec/div ranges. VR106, 107 permit adjustment respectively of gain and center during $\times$10MAG mode. VR105 adjusts X-axis gain during X-Y mode.

## CRT CIRCUIT

Q output of sweep control gate U102b generates the blanking signal.
Its amplitude is controlled in Q128, 129 by voltage coming from the INTENSITY control before the signal is sent to the blanking amplifier of Q1, 2.
After amplified in the blanking amplifier and high acceleration DC component of regenerated by D4 - 7, the blanking signal applies to a grid of the CRT. High voltages of 6 kV (for CS-1010, 2 kV) needed for trace in the CRT are generated by the DC-DC converter comprising T1 and Q 3.
Operational amplifier U1b performs feedback to obtain high stability.

## POWER SUPPLY

The regulated power supply requires no adjustment.
+5, −15, and +15 V are generated by 3-terminal regulators. +100 and +140 V are stabilazed against line voltage fluctuation by feedback applied by an operational amplifier.

## CALIBRATION VOLTAGE

No adjustment is needed for the calibration voltage.
An oscillator composed of operational amplifier U1 generates a stable signal.

# BLOCK DIAGRAM

CS-1020 (1010) BLOCK DIAGRAM

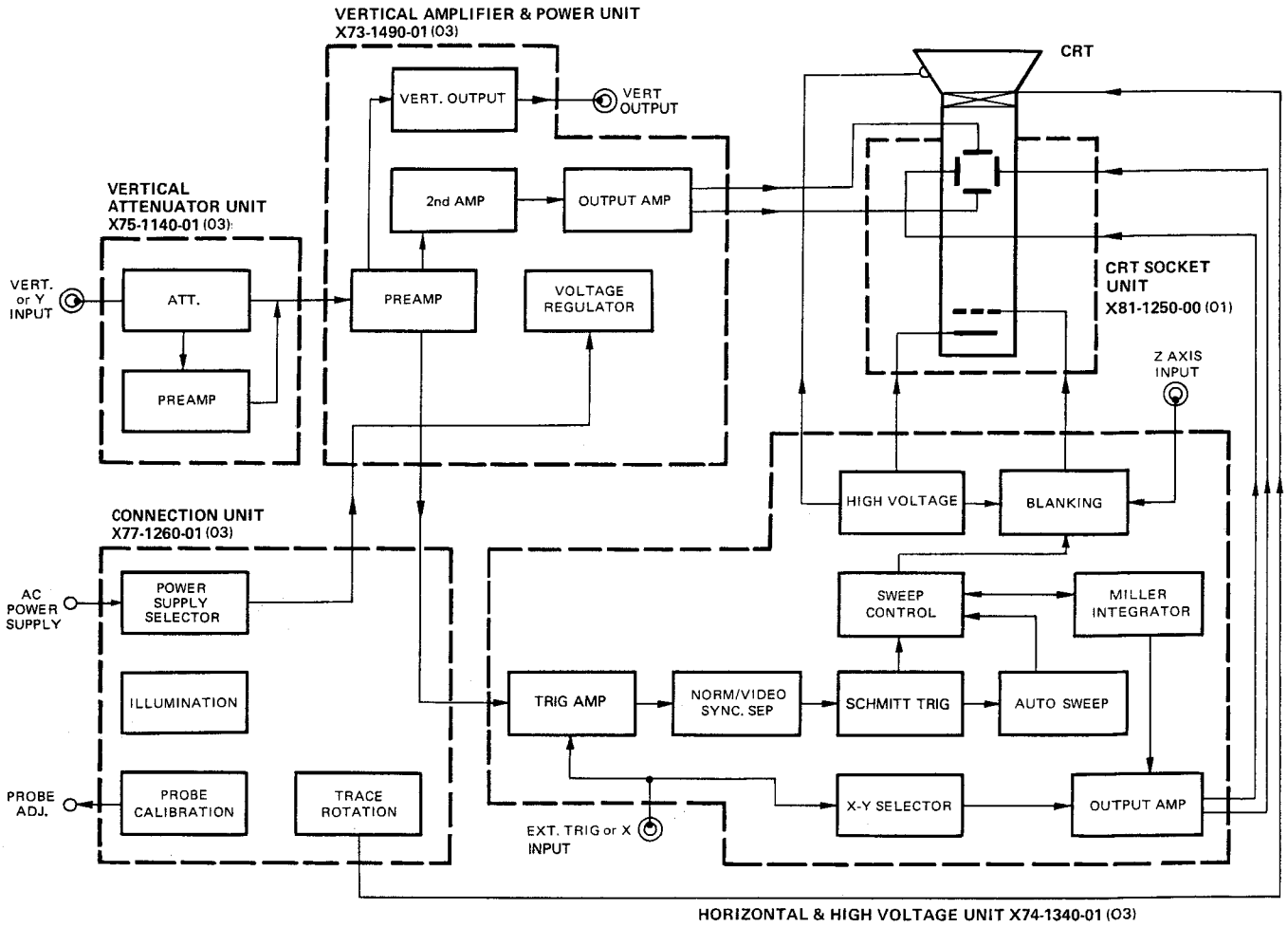



Fig. 6

# ADJUSTMENT

To obtain the best performance, periodically calibrate the unit. Sometimes, only one mode need be calibrated, while at other times, all modes should be calibrated. When one mode is calibrated, it must be noted that the other modes may be affected. When calibrating all modes, perform the calibration in the specified sequence.
The following calibration required an accurate measuring instrument and an insulated adjusting flat blade screwdriver. If they are not available, contact your dealer.
For optimum adjustment, turn the power on and warm up the this equipment sufficiently (more than 30 minutes) before starting.
Before calibrating the unit, check the power supply voltage.

## TEST EQUIPMENT REQUIRED

The following instrument or their equivalent should be used for making adjustment.

| Test Equipment | Model | Minimum Specification |
|---|---|---|
| Digital Multi-Meter | DL-706 (TRIO) | Impedance: More than 10 MΩ, Measuring range: 0.01 V to 199 V |
| Sine-Wave Generator | 651 B (YHP) | Frequency: 10 Hz to 10 MHz, constant voltage over tuning range |
| Sine-Wave Generator | SG-503 (Tektronix) | Frequency: 50 kHz to 100 MHz, Output impedance: 50 Ω, constant voltage over tuning range. |
| Square-Wave Generator | PG-506 (Tektronix) | Output signal: 1 kHz, Amplitude: 10 mVp-p to 10 Vp-p, Accuracy: within ±1%, Rise time: 35ns or less<br>100 kHz, Rise time: 1 ns or less |
| Q Meter | 4343B (YHP) | — |
| Color Pattern Generator | CG-911A (TRIO) | — |
| Oscilloscope | CS-2100A (TRIO) | Sensitivity: more than 5 mV Frequency response: More than 100 MHz |
| Time-Marker Generator | TG-501 (Tektronix) | Time mark: 0.5 s to 0.1μs repetive waveform |
| High-Voltage Probe | — | Input Impedance: 1000 MΩ |
| Termination | — | Impedance: 50 Ω Accuracy: within 3% |
| Termination | — | 3 watts type impedance: 50 Ω |
| Attenuator | — | −20 dB attenuation (50 Ω) |

## PREPARATION FOR ADJUSTMENT

**Control Setting**

The control setting listed below must be used for each adjustment procedure.
Exceptions to these settings will be noted as they occur.
After completing a adjustment, return the controls to the following settings.

| NAME OF KNOBS | POSITION |
|---|---|
| INTENSITY | 3 o'clock |
| FOCUS | Optimum position |
| CH1, CH2 POSITION | Mechanical center |
| ◄► H. POSITION/PULL ×10MAG | Mechanical center, push |
| VARIABLE (SWEEP TIME/DIV, VOLTS/DIV) | CAL |
| AC-GND-DC (CH1 and CH2) | DC (GND at no signal) |
| MODE | CH1 |
| CH2 POLARITY | NORM |
| COUPLING | AC |
| SOURCE | V.MODE |
| TRIG. LEVEL | Mechanical center, push |
| TRIG. MODE | AUTO |
| VOLTS/DIV | 10 mV/DIV |
| SWEEP TIME/DIV | 0.2 ms/DIV |

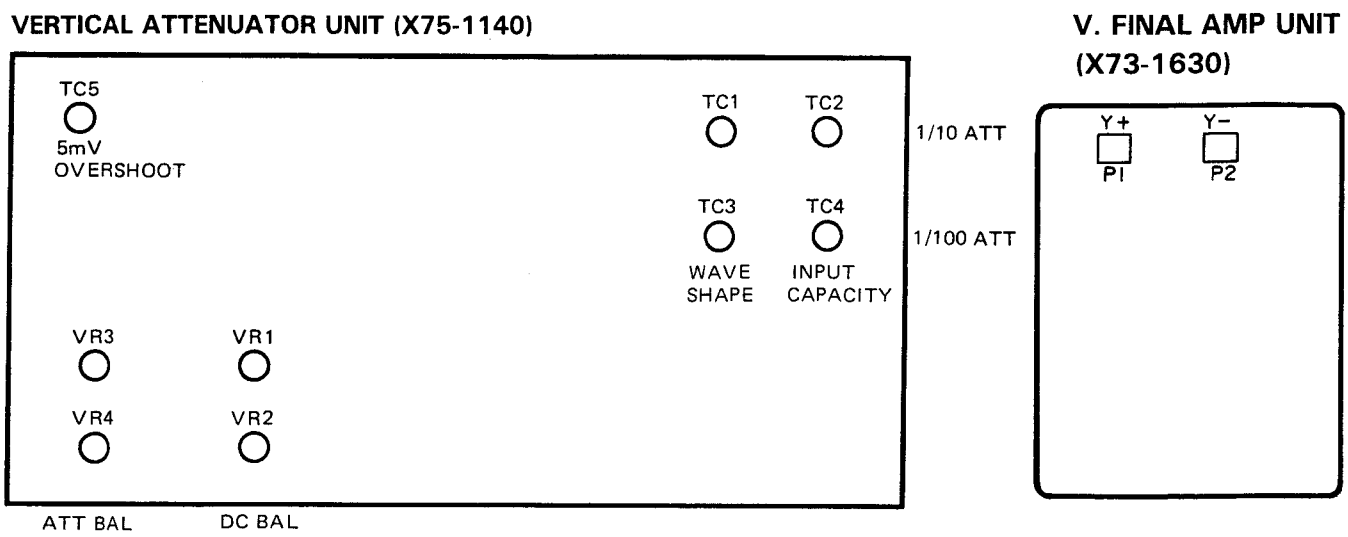
# ADJUSTMENT

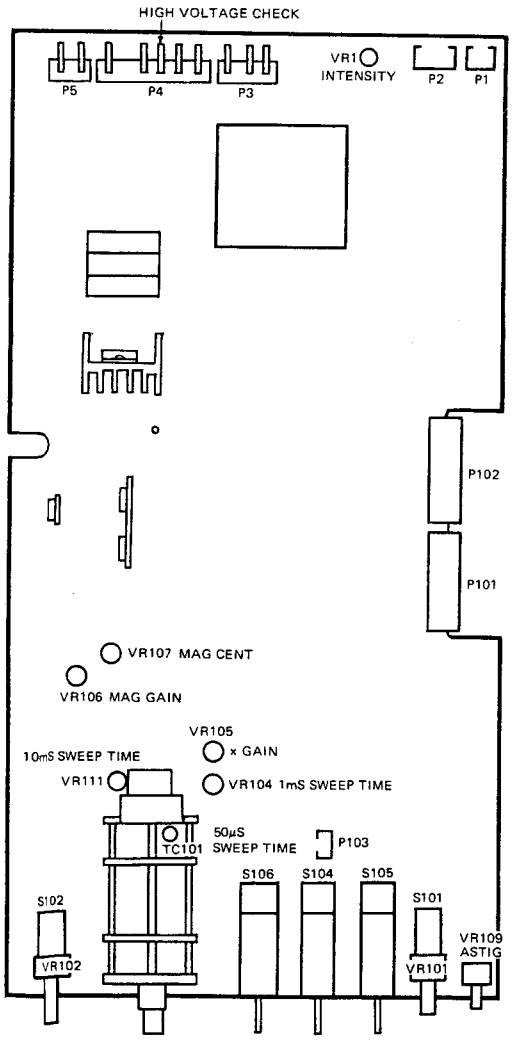
| Item | Control setting | Test equ. | Adjustment control | | | | P.C.B | Procedure |
|---|---|---|---|---|---|---|---|---|
| | | | 1021 1022 | 1012 | 1020 | 1010 | | |
| **POWER SUPPLY SECTION ADJ.** | | | | | | | | |
| **ASTIG, FOCUS** | TRIG MODE; X-Y | — | ASTIG, FOCUS | | | | | For the sharpest and roundest spot. |
| **INTENSITY** | AC-GND-DC; GND<br>TRIG MODE; X-Y | — | VR1 | | | | X74 | Spot disappears in 9 to 10 o'clock position. |
| **TRACE ROTATION** | AC-GND-DC; GND | — | TRACE ROTATION VR | | | | | Trace is in parallel with horizontal graduation line. |
| **CRT CENTER** | | DL-706 | VR4 | | | | X73 | Short the short terminal (P2). Trace should be in the CRT center. |
| **58 V ADJ.** | | DL-706 | VR3 | — | VR3 | — | X73 | Short the short terminal (P2). The voltage of +Y (−Y) should be 58 V±0.5 V. |
| **63 V ADJ.** | | DL-706 | — | VR3 | — | VR3 | X73 | Short the short terminal (P2). The voltage of +Y (−Y) should be 63 V±0.3 V. |
| **VERTICAL AMPLIFIER SECTION ADJ.** | | | | | | | | |
| **CH1 DC BAL** | VOLTS/DIV; 10 mV<br>AC-GND-DC; GND | | VR2 | VR2 | VR2 | VR2 | X75 | Trace does not move vertically when rotating CH1 variable control. |
| | | | VR1 | VR1 | — | VR1 | X75 | |
| **CH2 DC BAL** | VOLTS/DIV; 10 mV<br>AC-GND-DC; GND | | VR2 | VR2 | — | — | X75 | Trace does not move vertically when rotating CH2 variable control. |
| | | | VR1 | VR1 | — | — | X75 | |
| **CH1 ATT BAL** | VOLTS/DIV; 1 mV<br>AC-GND-DC; GND | | VR3 | VR3 | VR3 | VR3 | X75 | Trace does not move vertically when rotating CH1 variable control. |
| | | | VR4 | VR4 | VR4 | VR4 | X75 | |
| **CH2 ATT BAL** | VOLTS/DIV; 1 mV<br>AC-GND-DC; GND | | VR3 | VR3 | — | — | X75 | Trace does not move vertically when rotating CH2 variable control. |
| | | | VR4 | VR4 | — | — | X75 | |
| **CH2 INVERT** | MODE; CH2<br>AC-GND-DC; GND | | VR104 | VR104 | — | — | X73 | Trace should be overlapped in the center of the graduation. |
| **CH2 GAIN** | MODE; CH2<br>VOLTS/DIV; 10 mV | | VR5 | VR5 | VR5 (CH1 GAIN) | VR5 (CH1 GAIN) | X73 | When applying a 1 kHz, 50 mVp-p square wave signal, vertical amplitude should be 5 div. |
| **CH1 GAIN** | MODE; CH1<br>VOLTS/DIV; 10 mV | | VR103 | VR103 | — | — | X73 | When applying a 1 kHz, 50 mVp-p square wave signal, vertical amplitude should be 5 div. |
| **CH1 WAVESHAPE** | | PG-506 | TC1 | TC1 | TC1 | TC1 | X75 | Same as 10 mV range, a best flat top waveform should be obtained.<br>TC1.....0.1 V TC3.....1 V |
| | | | TC3 | TC3 | TC3 | TC3 | X75 | |
| **CH2 WAVESHAPE** | | PG-506 | TC1 | TC1 | — | — | X75 | Same as 10 mV range, a best flat top waveform should be obtained.<br>TC1.....0.1 V TC3.....1 V |
| | | | TC3 | TC3 | — | — | X75 | |
| **CH2 INPUT CAPACITY** | | 4343B | TC2 | TC2 | — | — | X75 | Input capacity should be 35pF ±3pF.<br>TC2.....0.1 V TC4.....1 V |
| | | | TC4 | TC4 | — | — | X75 | |
| **CH1 INPUT CAPACITY** | | 4343B | TC2 | TC2 | TC2 | TC2 | X75 | Input capacity should be 35pF ±3pF.<br>TC2.....0.1 V TC4.....1 V |
| | | | TC4 | TC4 | TC4 | TC4 | X75 | |

# ADJUSTMENT

| Item | Control setting | Test equ. | Adjustment control | | | | P.C.B | Procedure |
|---|---|---|---|---|---|---|---|---|
| | | | 1021 1022 | 1012 | 1020 | 1010 | | |
| CH1 OVERSHOOT | SWEEP TIME/DIV; 2 μs<br>PULL×10MAG; PULL<br>VOLTS/DIV; 10 mV | PG-506 | TC101 | TC101 | TC101 | TC101 | X73 | When applying a 100 kHz, square wave signal, vertical amplitude should be 6 div.<br>Set TC101 at mechanical center and with VR6, for the sharpest waveform.<br>TC1...mid range flat top waveform<br>TC2...high range flat top waveform<br>Set VOLTS/DIV to 5 mV for 6 div ± 3% vertical amplitude waveform. Overshoot should be ± 3%.<br>TC5...best flat top waveform. |
| | | | VR6 | VR6 | VR6 | VR6 | X73 | |
| | | | TC1 | TC1 | TC1 | TC1 | X73 | |
| | | | TC2 | TC2 | TC2 | TC2 | X73 | |
| | | | TC5 | TC5 | TC5 | TC5 | X75 | |
| CH2 OVERSHOOT | SWEEP TIME/DIV; 2 μs | PG-506 | TC102 | TC102 | — | — | X73 | When applying a 100 kHz square wave signal for 6 div vertical amplitude, overshoot should be ± 3%. |
| **HORIZONTAL HIGH VOLTAGE SECTION ADJ.** | | | | | | | | |
| 1 ms SWEEP TIME | SWEEP TIME/DIV; 1 ms | TG-501 | VR104 | VR104 | VR104 | VR104 | X74 | Pulse should be on each division on the graduation line. |
| MAG GAIN | SWEEP TIME/DIV; 1 ms<br>PULL×10MAG; PULL | TG501 | VR106 | VR106 | VR106 | VR106 | X74 | Interval of pulses should be 10 div when applying a 1 ms time marker signal. |
| MAG CENTER | SWEEP TIME/DIV; 1 ms<br>PULL×10MAG; PUSH | TG-501 | VR107 | VR107 | VR107 | VR107 | X74 | The center of pulse should be center of the graduation scale when applying a 5 ms marker signal.<br>H.POSITION...mechanical center. |
| 10 ms SWEEP TIME | SWEEP TIME/DIV; 10 ms | TG-501 | VR111 | VR111 | VR111 | VR111 | X74 | 11th pulse should correspond to the right end of the graduation line. |
| 20 μs SWEEP TIME | SWEEP TIME/DIV; 20 μs | TG-501 | TC101 | TC101 | TC101 | TC101 | X74 | 11th pulse should correspond to the right end of the graduation line. |
| X POSITION | TRIG MODE; X-Y⇒AUTO<br>AC-GND-DC; GND | | VR102 | VR102 | — | — | X73 | (1) Adjust the trace for center graduation line.<br>(2) Spot should be the center of the screen. |
| X GAIN | TRIG MODE; X-Y<br>VOLTS/DIV; 10 mV (CH2) | PG-506 | VR105 | VR105 | VR105 | VR105 | X74 | When applying a 1 kHz, 50 mV square wave signal, horizontal amplitude should be 5 div. |

# ADJUSTMENT



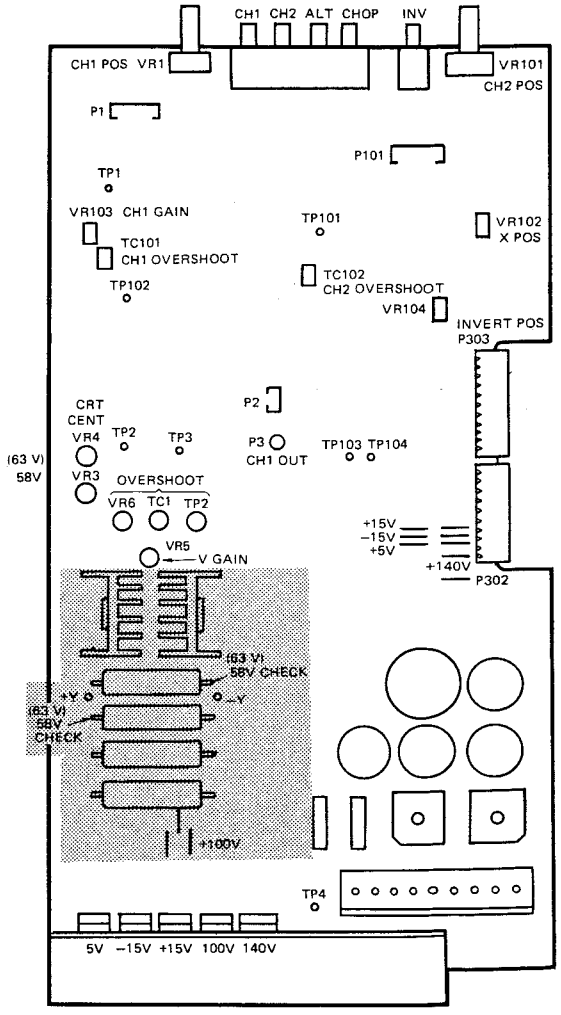




**Fig. 7 Location of adjustment control**

# PARTS LIST

## MAIN CHASSIS

### CS-1022 Y70-1400-21

| REF.NO | PARTS NO | NAME & DESCRIPTION |
|---|---|---|
| 1 | A01-0897-12 | CASE (TOP) |
| 2 | A01-0898-02 | CASE (BOTTOM) |
| 3 | A10-1435-12 | CHASSIS |
| 4 | A20-2761-02 | PANEL (MOLDED) |
| 5 | A21-1026-12 | DECORATIVE PANEL |
| 6 | A22-0826-02 | SUB PANEL |
| 7 | A22-0827-13 | SUB PANEL |
| 8 | A23-1642-02 | REAR PANEL |
| 9 | A33-0502-05 | REFLECTOR (FOR LAMP ASS'Y) |
| 10 | A33-0503-05 | REFLECTOR (FOR LAMP ASS'Y) |
| 11 | B07-0712-13 | ESCUTCHEON FOR FILTER |
| 12 | B19-0726-04 | FILTER |
| 13 | B30-0903-15 | LED LAMP (RED) |
| — | B30-0940-05 | LAMP ASS'Y |
| 14 | B30-0941-05 | LAMP |
| 15 | B39-0407-04 | SPACER |
| — | B40-2765-04 | NAME PLATE (SERIAL NO) |
| — | B41-0710-04 | CAUTION LABEL (HIGH VOLTAGE) |
| — | B41-0747-13 | CAUTION LABEL |
| — | B50-2998-00 | INSTRUCTION MANUAL |
| 16 | E04-0251-05 | BNC RECEPTACLE |
| 17 | E21-0657-04 | TERMINAL (GND) |
| 18 | E21-0660-04 | TERMINAL(CAL) |
| — | E23-0043-04 | EARTH LUG |
| — | E23-0513-05 | EARTH LUG |
| — | E23-0524-04 | EARTH LUG |
| — | E23-0525-14 | EARTH PLATE |
| 19 | E30-0545-05 | POWER CORD (JIS) |
| — | E30-1851-05 | POWER CORD ASS'Y (JIS) |
| — | E31-2371-05 | LEAD WIRE WITH CONNECTOR |
| — | E31-2372-05 | LEAD WIRE WITH CONNECTOR |
| — | E31-2373-15 | LEAD WIRE WITH CONNECTOR |
| 20 | F05-5013-05 | FUSE 0.5A |
| 21 | F05-8015-05 | FUSE 0.8A |
| — | F11-0990-13 | SHIELD CASE |
| 22 | F15-0733-04 | BLIND PLATE |
| — | F20-0622-05 | INSULATOR |
| 23 | G02-0607-04 | SPRING FOR CRT |
| 24 | G13-0716-04 | CUSHION |
| — | G16-0602-04 | REFLECTOR SHEET(L) |
| — | G16-0603-04 | REFLECTOR SHEET(R) |
| — | G16-0607-04 | REFLECTOR SHEET |
| — | H01-2986-04 | CARTON BOX |
| — | H10-2815-02 | FOAMED STYRENE PAD |
| — | H10-2816-02 | FOAMED STYRENE PAD |
| — | H20-1719-04 | VINYL COVER |
| — | H25-0029-04 | BAG |
| 25 | J02-0089-05 | LEG |
| 26 | J02-0510-14 | LEG |
| 27 | J10-0100-22 | BEZEL |
| 28 | J13-0033-15 | FUSE HOLDER |
| 39 | J19-1313-05 | LEAD HOLDER |
| 29 | J19-1633-13 | HORDER FOR CRT |
| 30 | J19-1634-04 | HOLDER FOR LEAD |
| 31 | J19-1635-04 | HOLDER FOR LED |
| 32 | J21-2573-04 | HOLDER FOR LEG |
| 33 | J21-2970-23 | BLACKET FOR CRT |
| 34 | J21-2972-04 | PLATE FOR POWER CORD |
| — | J21-4512-04 | BLACKET FOR CRT |
| 35 | J25-3000-05 | P.C.BOARD (FOR LAMP ASS'Y) |
| 36 | J31-0603-04 | COLLAR |
| 37 | J42-0083-05 | BUSHING |
| — | J42-0523-04 | BUSHING |
| 38 | J59-0403-05 | NYLON RIVET |
| — | J61-0408-05 | WIRE WRAPPING BAND |
| 40 | J61-0515-05 | SUPPORT (I TYPE) |
| 41 | J61-0516-05 | SUPPORT (T TYPE) |
| 42 | J61-0517-05 | STADOFF CLIP |
| 43 | K01-0518-05 | HANDLE |
| 44 | K21-0851-03 | KNOB |
| 45 | K21-0853-13 | KNOB |
| 46 | K21-0854-13 | KNOB |
| 47 | K21-0855-14 | KNOB |
| 48 | K21-0856-13 | KNOB |
| 49 | K27-0526-04 | KNOB FOR LEVER |
| 50 | K27-0528-04 | KNOB FOR PUSH |
| 51 | L01-9344-15 | POWER TRANSFORMER |
| 52 | L39-0518-05 | ROTATOR COIL |
| | N08-0611-04 | DRESSED SCREW |
| | N09-0715-04 | SCREW, PAN HD M 4X31 |
| | N09-0716-05 | SCREW |
| | N09-0717-05 | SCREW, TRUSS HD M 3X12 |
| | N09-0720-05 | SCREW, SEMS PAN HD |
| | N10-2070-46 | NUT, HEX |
| | N15-1030-41 | WASHER, FLAT FOR M3 |
| | N15-1040-41 | WASHER |
| | N19-0191-05 | WASHER NONMETAL |
| | N30-3004-46 | SCREW, PAN HD M 3X4 |
| | N30-3006-46 | SCREW, PAN HD M 3X6 |
| | N88-3006-46 | SCREW, FLAT HD TAP TITE |
| | N89-3006-41 | SCREW, BINDING TAP TITE |
| 53 | R03-3502-15 | V.R. 10K B |
| 54 | R05-3504-05 | V.R. 10K B |
| 55 | R05-3505-05 | V.R. 20K B |
| 56 | R05-8001-05 | V.R. 3M B |
| 57 | W01-0503-04 | CORD WRAP |
| 58 | X73-1490-00 | VERTICAL,POWER SUPPLY UNIT |
| 59 | X74-1340-00 | HORIZONTAL UNIT |
| 60 | X75-1140-00 | VERTICAL ATTENUATOR UNIT |
| 61 | X77-1260-00 | CONNECTION UNIT |
| 62 | X81-1250-00 | C.R.T SOCKET UNIT |
| | Y87-1840-00 | PROBE PC-20 |
| 63 | 150FTM31 | CRT |
| | 212-2014-05 | TUBE (PLASTIC) |
| | 212-3017-05 | TUBE (PLASTIC) |
| Q001 | 2SD613(E) | TR. SI, NPN |
| R100 | RD14BB2E331J | RES. CARBON 330 5% 1/4W |

### CS-1020 Y70-1410-21

| REF.NO | PARTS NO | NAME & DESCRIPTION |
|---|---|---|
| | A01-0897-12 | CASE (TOP) |
| | A01-0898-02 | CASE (BOTTOM) |
| | A10-1435-02 | CHASSIS |
| | A20-2761-02 | PANEL |
| | A21-1027-12 | DECORATIVE PANEL |
| | A22-0826-02 | SUB PANEL |
| | A22-0827-13 | SUB PANEL |
| | A23-1642-02 | REAR PANEL |
| | A33-0502-05 | REFLECTOR (FOR LAMP ASS'Y) |
| | A33-0503-05 | REFLECTOR (FOR LAMP ASS'Y) |
| | B07-0712-13 | ESCUTCHEON FOR FILTER |
| | B19-0726-04 | FILTER |
| | B30-0903-15 | LED LAMP (RED) |
| | B30-0940-05 | LAMP ASS'Y |
| | B30-0941-05 | LAMP |
| | B39-0407-04 | SPACER |
| | B40-2765-04 | NAME PLATE (SERIAL NO) |
| | B41-0710-04 | CAUTION LABEL (HIGH VOLTAGE) |
| | B41-0748-13 | CAUTION LABEL |
| | B50-2998-00 | INSTRUCTION MANUAL |
| | E04-0251-05 | BNC RECEPTACLE |
| | E21-0657-04 | TERMINAL (GND) |
| | E21-0660-04 | TERMINAL(CAL) |
| | E23-0043-04 | EARTH LUG |
| | E23-0513-05 | EARTH LUG |
| | E23-0524-04 | EARTH LUG |
| | E23-0525-14 | EARTH PLATE |
| | E30-0545-05 | AC POWER CORD |
| | E30-1851-05 | POWER CORD ASS'Y (JIS) |
| | E31-2371-05 | LEAD WIRE WITH CONNECTOR |
| | E31-2372-05 | LEAD WIRE WITH CONNECTOR |
| | E31-2373-15 | LEAD WIRE WITH CONNECTOR |
| | F05-5013-05 | FUSE 0.5A |
| | F05-8015-05 | FUSE 0.8A |
| | F11-0981-03 | SHIELD CASE FOR CRT |
| | F20-0622-05 | INSULATOR |
| | G02-0607-04 | SPRING FOR CRT |
| | G13-0716-04 | CUSHION |
| | G16-0602-04 | REFLECTOR SHEET(L) |
| | G16-0603-04 | REFLECTOR SHEET(R) |
| | G16-0607-04 | REFLECTOR SHEET |
| | H01-2987-04 | CARTON BOX |
| | H10-2815-02 | FOAMED STYRENE PAD |
| | H10-2816-02 | FOAMED STYRENE PAD |
| | H20-1719-04 | VINYL COVER |
| | H25-0029-04 | BAG |
| | J02-0089-05 | LEG |
| | J02-0510-14 | LEG |
| | J10-0100-12 | BEZEL |
| | J13-0033-15 | FUSE HOLDER |
| | J19-1313-05 | LEAD HOLDER |
| | J19-1633-03 | HOLDER FOR CRT |
| | J19-1634-04 | HOLDER FOR LEAD |
| | J19-1635-04 | HOLDER FOR LED |
| | J21-2573-04 | HOLDER FOR LEG |
| | J21-2970-13 | BRACKET FOR CRT |
| | J21-2972-04 | PLATE FOR POWER CORD |
| | J25-3000-05 | P.C.BOARD (FOR LAMP ASS'Y) |
| | J31-0603-04 | COLLAR |
| | J42-0083-05 | BUSHING |
| | J59-0403-05 | NYLON RIVET |
| | J61-0401-05 | WIRE BAND |
| | J61-0515-05 | SUPPORT (I TYPE) |
| | J61-0516-05 | SUPPORT (T TYPE) |
| | J61-0517-05 | STADOFF CLIP |
| | K01-0518-05 | HANDLE |
| | K21-0851-03 | KNOB |
| | K21-0853-03 | KNOB |
| | K21-0854-03 | KNOB |
| | K21-0855-14 | KNOB |
| | K21-0856-03 | KNOB |
| | K27-0526-04 | KNOB FOR LEVER |

# PARTS LIST

| REF.NO | PARTS NO | NAME & DESCRIPTION |
|---|---|---|
| | L01-9344-15 | POWER TRANSFORMER |
| | L39-0518-05 | ROTATOR COIL |
| | N08-0611-04 | DRESSED SCREW |
| | N09-0715-04 | SCREW, PAN HD M 4X31 |
| | N09-0716-05 | SCREW |
| | N09-0717-05 | SCREW, TRUSS HD M 3X12 |
| | N09-0720-05 | SCREW, SEMS PAN HD |
| | N10-2070-46 | NUT, HEX |
| | N15-1030-41 | WASHER, FLAT FOR M3 |
| | N15-1040-41 | WASHER |
| | N19-0191-05 | WASHER NONMETAL |
| | N30-3004-46 | SCREW, PAN HD M 3X4 |
| | N30-3006-46 | SCREW, PAN HD M 3X6 |
| | N33-4012-41 | SCREW M 4X12 |
| | N88-3006-46 | SCREW, FLAT HD TAP TITE |
| | N89-3006-41 | SCREW, BINDING TAP TITE |
| | R03-3502-15 | V.R. 10K B |
| | R05-3504-05 | V.R. 10K B |
| | R05-3505-05 | V.R. 20K B |
| | R05-8001-05 | V.R. 3M B |
| | W01-0503-04 | CORD WRAP |
| | X73-1490-01 | VERTICAL,POWER SUPPLY UNIT |
| | X74-1340-01 | HORIZONTAL UNIT |
| | X75-1140-01 | VERTICAL ATTENUATOR UNIT |
| | X77-1260-01 | CONNECTION UNIT |
| | X81-1250-00 | C.R.T SOCKET UNIT |
| | Y87-1840-00 | PROBE PC-20 |
| | 150FTM31 | CRT |
| Q001 | 2SD613(E) | TR. SI, NPN |
| R100 | RD14BB2E331J | RES. CARBON 330 5% 1/4W |

## CS-1012 Y70-1420-21

| REF.NO | PARTS NO | NAME & DESCRIPTION |
|---|---|---|
| | A01-0897-12 | CASE (TOP) |
| | A01-0898-02 | CASE (BOTTOM) |
| | A10-1435-12 | CHASSIS |
| | A20-2761-02 | PANEL (MOLDED) |
| | A21-1028-12 | DECORATIVE PANEL |
| | A22-0826-02 | SUB PANEL |
| | A22-0827-13 | SUB PANEL |
| | A23-1642-02 | REAR PANEL |
| | A33-0502-05 | REFLECTOR (FOR LAMP ASS'Y) |
| | A33-0503-05 | REFLECTOR (FOR LAMP ASS'Y), |
| | B07-0712-13 | ESCUTCHEON FOR FILTER |
| | B19-0726-04 | FILTER |
| | B30-0903-15 | LED LAMP (RED) |
| | B30-0940-05 | LAMP ASS'Y |
| | B30-0941-05 | LAMP |
| | B39-0407-04 | SPACER |
| | B40-2765-04 | NAME PLATE (SERIAL NO) |
| | B41-0749-13 | CAUTION LABEL |
| | B50-2998-00 | INSTRUCTION MANUAL |
| | E04-0251-05 | BNC RECEPTACLE |
| | E21-0657-04 | TERMINAL (GND) |
| | E21-0660-04 | TERMINAL(CAL) |
| | E23-0043-04 | EARTH LUG |
| | E23-0513-05 | EARTH LUG |
| | E23-0524-04 | EARTH LUG |
| | E23-0525-14 | EARTH PLATE |
| | E30-0545-05 | POWER CORD (JIS) |
| | E30-1851-05 | POWER CORD ASS'Y (JIS) |
| | E31-2371-05 | LEAD WIRE WITH CONNECTOR |
| | E31-2372-05 | LEAD WIRE WITH CONNECTOR |
| | E31-2373-15 | LEAD WIRE WITH CONNECTOR |
| | F05-5013-05 | FUSE 0.5A |
| | F05-8015-05 | FUSE 0.8A |
| | F10-1565-04 | SHIELDING PLATE |
| | F11-0982-23 | SHIELD CASE |
| | F15-0734-04 | BLIND PLATE |
| | F20-0622-05 | INSULATOR |
| | G02-0607-04 | SPRING FOR CRT |
| | G13-0716-04 | CUSHION |
| | G16-0602-04 | REFLECTOR SHEET(L) |
| | G16-0603-04 | REFLECTOR SHEET(R) |
| | G16-0607-04 | REFLECTOR SHEET |
| | H01-2988-04 | CARTON BOX |
| | H10-2815-02 | FOAMED STYRENE PAD |
| | H10-2816-02 | FOAMED STYRENE PAD |
| | H20-1719-04 | VINYL COVER |
| | H25-0029-04 | BAG |
| | J02-0089-05 | LEG |
| | J02-0510-14 | LEG |
| | J10-0100-22 | BEZEL |
| | J13-0033-15 | FUSE HOLDER |
| | J19-1313-05 | LEAD HOLDER |
| | J19-1633-13 | HORDER FOR CRT |
| | J19-1634-04 | HOLDER FOR LEAD |
| | J19-1635-04 | HOLDER FOR LED |
| | J21-2573-04 | HOLDER FOR LEG |
| | J21-2970-23 | BLACKET FOR CRT |
| | J21-2972-14 | PLATE FOR POWER CORD |
| | J21-4512-04 | BLACKET FOR CRT |
| | J25-3000-05 | P.C.BOARD (FOR LAMP ASS'Y) |
| | J31-0603-04 | COLLAR |
| | J42-0083-05 | BUSHING |
| | J42-0524-04 | BUSHING |
| | J59-0403-05 | NYLON RIVET |
| | J61-0408-05 | WIRE WRAPPING BAND |
| | J61-0515-05 | SUPPORT (I TYPE) |
| | J61-0516-05 | SUPPORT (T TYPE) |
| | J61-0517-05 | STADOFF CLIP |
| | K01-0518-05 | HANDLE |
| | K21-0851-03 | KNOB |
| | K21-0853-13 | KNOB |
| | K21-0854-13 | KNOB |
| | K21-0855-14 | KNOB |
| | K21-0856-13 | KNOB |
| | K27-0526-04 | KNOB FOR LEVER |
| | K27-0528-04 | KNOB FOR PUSH |

| REF.NO | PARTS NO | NAME & DESCRIPTION |
|---|---|---|
| | L01-9344-15 | POWER TRANSFORMER |
| | L39-0518-05 | ROTATOR COIL |
| | N08-0611-04 | DRESSED SCREW |
| | N09-0715-04 | SCREW, PAN HD M 4X31 |
| | N09-0716-05 | SCREW |
| | N09-0717-05 | SCREW, TRUSS HD M 3X12 |
| | N09-0720-05 | SCREW, SEMS PAN HD |
| | N10-2070-46 | NUT, HEX |
| | N15-1030-41 | WASHER, FLAT FOR M3 |
| | N15-1040-41 | WASHER |
| | N19-0191-05 | WASHER NONMETAL |
| | N30-3004-46 | SCREW, PAN HD M 3X4 |
| | N30-3006-46 | SCREW, PAN HD M 3X6 |
| | N88-3006-46 | SCREW, FLAT HD TAP TITE |
| | N89-3006-41 | SCREW, BINDING TAP TITE |
| | R03-3502-15 | V.R. 10K B |
| | R05-3504-05 | V.R. 10K B |
| | R05-3505-05 | V.R. 20K B |
| | R05-8001-05 | V.R. 3M B |
| | W01-0503-04 | CORD WRAP |
| | X73-1490-02 | VERTICAL,POWER SUPPLY UNIT |
| | X74-1340-02 | HORIZONTAL UNIT |
| | X75-1140-02 | VERTICAL ATTENUATOR UNIT |
| | X77-1260-02 | CONNECTION UNIT |
| | X81-1250-01 | C.R.T SOCKET UNIT |
| | Y87-1840-00 | PROBE PC-20 |
| | 150GTM31 | CRT |
| | 212-2014-05 | TUBE (PLASTIC) |
| | 212-3017-05 | TUBE (PLASTIC) |
| Q001 | 2SD613(E) | TR. SI, NPN |
| R100 | RD14BB2E431J | RES. CARBON 430 5% 1/4W |

## CS-1010 Y70-1430-21

| REF.NO | PARTS NO | NAME & DESCRIPTION |
|---|---|---|
| | A01-0897-12 | CASE (TOP) |
| | A01-0898-02 | CASE (BOTTOM) |
| | A10-1435-12 | CHASSIS |
| | A20-2761-02 | PANEL (MOLDED) |
| | A21-1029-12 | DECORATIVE PANEL |
| | A22-0826-02 | SUB PANEL |
| | A22-0827-13 | SUB PANEL |
| | A23-1642-02 | REAR PANEL |
| | A33-0502-05 | REFLECTOR (FOR LAMP ASS'Y) |
| | A33-0503-05 | REFLECTOR (FOR LAMP ASS'Y) |
| | B07-0712-13 | ESCUTCHEON FOR FILTER |
| | B19-0726-04 | FILTER |
| | B30-0903-15 | LED LAMP (RED) |
| | B30-0940-05 | LAMP ASS'Y |
| | B30-0941-05 | LAMP |
| | B39-0407-04 | SPACER |
| | B40-2765-04 | NAME PLATE (SERIAL NO) |
| | B41-0750-13 | CAUTION LABEL |
| | B50-2998-00 | INSTRUCTION MANUAL |
| | E04-0251-05 | BNC RECEPTACLE |
| | E21-0657-04 | TERMINAL (GND) |
| | E21-0660-04 | TERMINAL(CAL) |
| | E23-0043-04 | EARTH LUG |
| | E23-0513-05 | EARTH LUG |
| | E23-0524-04 | EARTH LUG |
| | E23-0525-14 | EARTH PLATE |
| | E30-0545-05 | POWER CORD (JIS) |
| | E30-1851-05 | POWER CORD ASS'Y (JIS) |
| | E31-2371-05 | LEAD WIRE WITH CONNECTOR |
| | E31-2372-05 | LEAD WIRE WITH CONNECTOR |
| | E31-2373-15 | LEAD WIRE WITH CONNECTOR |
| | F05-5013-05 | FUSE 0.5A |
| | F05-8015-05 | FUSE 0.8A |
| | F10-1565-04 | SHIELDING PLATE |
| | F11-0982-23 | SHIELD CASE |
| | F15-0734-04 | BLIND PLATE |
| | F20-0622-05 | INSULATOR |

# PARTS LIST

| REF.NO | PARTS NO | NAME & DESCRIPTION |
|---|---|---|
| | G02-0607-04 | SPRING FOR CRT |
| | G13-0716-04 | CUSHION |
| | G16-0602-04 | REFLECTOR SHEET(L) |
| | G16-0603-04 | REFLECTOR SHEET(R) |
| | G16-0607-04 | REFLECTOR SHEET |
| | H01-2989-04 | CARTON BOX |
| | H10-2815-02 | FOAMED STYRENE PAD |
| | H10-2816-02 | FOAMED STYRENE PAD |
| | H20-1719-04 | VINYL COVER |
| | H25-0029-04 | BAG |
| | J02-0089-05 | LEG |
| | J02-0510-14 | LEG |
| | J10-0100-22 | BEZEL |
| | J13-0033-15 | FUSE HOLDER |
| | J19-1313-05 | LEAD HOLDER |
| | J19-1633-13 | HORDER FOR CRT |
| | J19-1634-04 | HOLDER FOR LEAD |
| | J19-1635-04 | HOLDER FOR LED |
| | J21-2573-04 | HOLDER FOR LEG |
| | J21-2970-23 | BLACKET FOR CRT |
| | J21-2972-04 | PLATE FOR POWER CORD |
| | J21-4512-04 | BLACKET FOR CRT |
| | J25-3000-05 | P.C.BOARD (FOR LAMP ASS'Y) |
| | J31-0603-04 | COLLAR |
| | J42-0083-05 | BUSHING |
| | J42-0524-04 | BUSHING |
| | J59-0403-05 | NYLON RIVET |
| | J61-0408-05 | WIRE WRAPPING BAND |
| | J61-0515-05 | SUPPORT (I TYPE) |
| | J61-0516-05 | SUPPORT (T TYPE) |
| | J61-0517-05 | STADOFF CLIP |
| | K01-0518-05 | HANDLE |
| | K21-0851-03 | KNOB |
| | K21-0853-13 | KNOB |
| | K21-0854-13 | KNOB |
| | K21-0855-14 | KNOB |
| | K21-0856-13 | KNOB |
| | K27-0526-04 | KNOB FOR LEVER |
| | L01-9344-15 | POWER TRANSFORMER |
| | L39-0518-05 | ROTATOR COIL |
| | N08-0611-04 | DRESSED SCREW |
| | N09-0715-04 | SCREW, PAN HD M 4X31 |
| | N09-0716-05 | SCREW |
| | N09-0717-05 | SCREW, TRUSS HD M 3X12 |
| | N09-0720-05 | SCREW, SEMS PAN HD |
| | N10-2070-46 | NUT, HEX |
| | N15-1030-41 | WASHER, FLAT FOR M3 |
| | N15-1040-41 | WASHER |
| | N19-0191-05 | WASHER NONMETAL |
| | N30-3004-46 | SCREW, PAN HD M 3X4 |
| | N30-3006-46 | SCREW, PAN HD M 3X6 |
| | N88-3006-46 | SCREW, FLAT HD TAP TITE |
| | N89-3006-41 | SCREW, BINDING TAP TITE |
| | R03-3502-15 | V.R. 10K B |
| | R05-3504-05 | V.R. 10K B |
| | R05-3505-05 | V.R. 20K B |
| | R05-8001-05 | V.R. 3M B |
| | W01-0503-04 | CORD WRAP |
| | X73-1490-03 | VERTICAL,POWER SUPPLY UNIT |
| | X74-1340-03 | HORIZONTAL UNIT |
| | X75-1140-03 | VERTICAL ATTENUATOR UNIT |
| | X77-1260-03 | CONNECTION UNIT |
| | X81-1250-01 | C.R.T SOCKET UNIT |
| | Y87-1840-00 | PROBE PC-20 |
| | 150GTM31 | CRT |
| | 212-2014-05 | TUBE (PLASTIC) |
| | 212-3017-05 | TUBE (PLASTIC) |
| Q001 | 2SD613(E) | TR. SI, NPN |
| R100 | RD14BB2E431J | RES. CARBON 430 5% 1/4W |

## VERTICAL ATTENUATOR UNIT

## (X75-1140-00)

| REF.NO | PARTS NO | NAME & DESCRIPTION |
|---|---|---|
| 1 | A22-0828-03 | SUB PANEL |
| 2 | E04-0251-05 | BNC RECEPTACLE |
| | E33-4038-00 | WIRE ASSY |
| 3 | F10-1564-04 | SHIELD PLATE |
| | F10-1566-04 | SHIELD PLATE |
| | J25-2997-13 | PCB (UNMOUNTED) |
| 4 | K21-0852-03 | KNOB |
| 5 | K21-0855-14 | KNOB |
| | N30-3006-46 | SCREW, PAN HD M 3X6 |
| | N89-3006-41 | SCREW, BINDING TAP TITE |
| | R92-0150-05 | JUMPING RES. ZERO OHM |
| | 212-2014-05 | TUBE (PLASTIC) |
| C001 | C91-0501-05 | CAP. METAL FILM 0.047 10% 630V |
| C002 | CM93B02A470J | CAP. MICA 47P 5% 100V |
| C003 | CM93B02A471J | CAP. MICA 470P 5% 100V |
| C004 | C91-0502-05 | CAP. METAL FILM 0.01 20% 630V |
| C005 | CK45B1H103K | CAP. CERAMIC 0.01 10% 50V |
| C006 | CC45CH1H0R5C | CAP. CERAMIC 0.5P 0.25P 50V |

| REF.NO | PARTS NO | NAME & DESCRIPTION |
|---|---|---|
| C009 | CC45CH1H470J | CAP. CERAMIC 47P 5% 50V |
| C010 | CK45B1H103K | CAP. CERAMIC 0.01 10% 50V |
| C011 | CK45B1H103K | CAP. CERAMIC 0.01 10% 50V |
| C012 | CK45B1H103K | CAP. CERAMIC 0.01 10% 50V |
| C013 | CE04W1E470M | CAP. ELECTRO 47 20% 25V |
| C014 | CE04W1E470M | CAP. ELECTRO 47 20% 25V |
| C015 | CE04W1E470M | CAP. ELECTRO 47 20% 25V |
| C016 | CE04W1E470M | CAP. ELECTRO 47 20% 25V |
| C017 | CC45CH1H030C | CAP. CERAMIC 3P 0.25P 50V |
| C018 | CC45CH1H010C | CAP. CERAMIC 1P 0.25P 50V |
| C019 | CE04BW1H010M | CAP. ELECTRO 1 20% 50V |
| C020 | CK45B1H152K | CAP. CERAMIC 1500P 10% 50V |
| C021 | NO USE | |
| C022 | CK45B1H103K | CAP. CERAMIC 0.01 10% 50V |
| C023 | CK45B1H103K | CAP. CERAMIC 0.01 10% 50V |
| D001 | MTZ9.1JC | DIODE, ZENER 9V |
| D002 | MTZ9.1JC | DIODE, ZENER 9V |
| J001 | E31-2367-15 | LEAD WIRE WITH CONNECTOR |
| Q001 | 2SK30A(D) | FET. N-CHANNEL |
| Q002 | 2SA1005(K) | TR. SI, PNP |
| Q003 | 2SA1005(K) | TR. SI, PNP |
| Q004 | 2SC2786(K) | TR. SI, NPN |
| Q005 | 2SC2786(K) | TR. SI, NPN |
| R001 | RD14BB2E220J | RES. CARBON 22 5% 1/4W |
| R002 | RD14BB2E105J | RES. CARBON 1M 5% 1/4W |
| R003 | RD14BB2E220J | RES. CARBON 22 5% 1/4W |
| R004 | RD14BB2E220J | RES. CARBON 22 5% 1/4W |
| R005 | RN14BK2E9003F | RES. METAL FILM 900K 1% 1/4W |
| R006 | RN14BK2E1113F | RES. METAL FILM 111K 1% 1/4W |
| R007 | RD14BB2E820J | RES. CARBON 82 5% 1/4W |
| R008 | RN14BK2E9903F | RES. METAL FILM 990K 1% 1/4W |
| R009 | RN14BK2E1012F | RES. METAL FILM 10.1K 1% 1/4W |
| R010 | RD14BB2E100J | RES. CARBON 10 5% 1/4W |
| R011 | RN14BK2E1004F | RES. METAL FILM 1M 1% 1/4W |
| R012 | RD14BB2E104J | RES. CARBON 100K 5% 1/4W |
| R013 | RN14BK2E3900F | RES. METAL FILM 390 1% 1/4W |
| R014 | RD14BB2E101J | RES. CARBON 100 5% 1/4W |
| R015 | RN14BK2E3900F | RES. METAL FILM 390 1% 1/4W |
| R016 | RD14BB2C101J | RES. CARBON 100 5% 1/6W |
| R017 | RD14BB2C302J | RES. CARBON 3K 5% 1/6W |
| R018 | RD14BB2C101J | RES. CARBON 100 5% 1/6W |
| R019 | RD14BB2E271J | RES. CARBON 270 5% 1/4W |
| R020 | NO USE | |
| R021 | RD14BB2E124J | RES. CARBON 120K 5% 1/4W |
| R022 | RD14BB2E220J | RES. CARBON 22 5% 1/4W |
| R023 | RD14BB2E562J | RES. CARBON 5.6K 5% 1/4W |
| R024 | RD14BB2E562J | RES. CARBON 5.6K 5% 1/4W |
| R025 | RD14BB2E392J | RES. CARBON 3.9K 5% 1/4W |
| R026 | RD14BB2E753J | RES. CARBON 75K 5% 1/4W |
| R027 | RD14BB2E754J | RES. CARBON 750K 5% 1/4W |
| R028 | RD14BB2E122J | RES. CARBON 1.2K 5% 1/4W |
| R029 | RD14BB2C332J | RES. CARBON 3.3K 5% 1/6W |
| R030 | RD14BB2E332J | RES. CARBON 3.3K 5% 1/4W |
| R031 | RD14BB2E332J | RES. CARBON 3.3K 5% 1/4W |
| R032 | RD14BB2C561J | RES. CARBON 560 5% 1/6W |
| R033 | RN14BK2E9100F | RES. METAL FILM 910 1% 1/4W |
| R034 | RN14BK2E1000F | RES. METAL FILM 100 1% 1/4W |
| R035 | RD14BB2E220J | RES. CARBON 22 5% 1/4W |
| R036 | RN14BK2E3000F | RES. METAL FILM 300 1% 1/4W |
| R037 | RN14BK2E1800F | RES. METAL FILM 180 1% 1/4W |
| R038 | RN14BK2E1200F | RES. METAL FILM 120 1% 1/4W |
| R039 | RD14BB2E151J | RES. CARBON 150 5% 1/4W |
| R040 | RD14BB2E560J | RES. CARBON 56 5% 1/4W |
| R041 | RN14BK2E3000F | RES. METAL FILM 300 1% 1/4W |
| R042 | RN14BK2E1800F | RES. METAL FILM 180 1% 1/4W |
| R043 | RN14BK2E1200F | RES. METAL FILM 120 1% 1/4W |
| R044 | RD14BB2E151J | RES. CARBON 150 5% 1/4W |
| R045 | RD14BB2E560J | RES. CARBON 56 5% 1/4W |
| R046 | RD14BB2E333J | RES. CARBON 33K 5% 1/4W |
| R047 | RD14BB2E473J | RES. CARBON 47K 5% 1/4W |
| R048 | RD14BB2E472J | RES. CARBON 4.7K 5% 1/4W |
| R049 | RD14BB2C163J | RES. CARBON 16K 5% 1/6W |
| R050 | RD14BB2C131J | RES. CARBON 130 5% 1/6W |
| R051 | NO USE | |
| R052 | RD14BB2C910J | RES. CARBON 91 5% 1/6W |
| R053 | RD14BB2C111J | RES. CARBON 110 5% 1/6W |
| R054 | RD14BB2E220J | RES. CARBON 22 5% 1/4W |
| S001 | S32-4007-05 | SLIDE SWITCH |
| S002 | S02-3501-15 | ROTARY SWITCH |
| TC001 | C05-0427-05 | CAP. TRIMMER 10P |
| TC002 | C05-0428-05 | CAP. TRIMMER 20P |
| TC003 | C05-0427-05 | CAP. TRIMMER 10P |
| TC004 | C05-0428-05 | CAP. TRIMMER 20P |
| TC005 | C05-0427-05 | CAP. TRIMMER 10P |
| U001 | M47F(C) | FET, DUAL SI, N-CHANNEL |
| U002 | 2SA884 | TR. SI, PNP |
| U003 | M47F(B) | FET |

# PARTS LIST

| REF.NO | PARTS NO | NAME & DESCRIPTION |
|---|---|---|
| VR002 | R12-3502-05 | RES. SEMI FIXED 33K B |
| VR003 | R12-3502-05 | RES. SEMI FIXED 33K B |
| VR004 | R12-3502-05 | RES. SEMI FIXED 33K B |
| VR005 | S02-3501-15 | ROTARY SWITCH |

## VERTICAL ATTENUATOR UNIT

### (X75-1140-01)

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| | A22-0828-03 | SUB PANEL | | | |
| | E04-0251-05 | BNC RECEPTACLE | | | |
| | E33-4038-00 | WIRE ASSY | | | |
| | F10-1564-04 | SHIELD PLATE | | | |
| | F10-1566-04 | SHIELD PLATE | | | |
| | J25-2997-13 | PCB (UNMOUNTED) | | | |
| | K21-0852-03 | KNOB | | | |
| | K21-0855-14 | KNOB | | | |
| | N30-3006-46 | SCREW, PAN HD M 3X6 | | | |
| | N89-3006-41 | SCREW, BINDING TAP TITE | | | |
| | R92-0150-05 | JUMPING RES. ZERO OHM | | | |
| C001 | C91-0501-05 | CAP. METAL FILM | 0.047 | 10% | 630V |
| C002 | CM93BD2A470J | CAP. MICA | 47P | 5% | 100V |
| C003 | CM93BD2A471J | CAP. MICA | 470P | 5% | 100V |
| C004 | C91-0502-05 | CAP. METAL FILM | 0.01 | 20% | 630V |
| C005 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |
| C006 | CC45CH1H0R5C | CAP. CERAMIC | 0.5P | 0.25P | 50V |
| C009 | CC45CH1H470J | CAP. CERAMIC | 47P | 5% | 50V |
| C010 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |
| C011 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |
| C012 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |
| C013 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C014 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C015 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C016 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C017 | CC45CH1H030C | CAP. CERAMIC | 3P | 0.25P | 50V |
| C018 | CC45CH1H010C | CAP. CERAMIC | 1P | 0.25P | 50V |
| C019 | CE04BW1H010M | CAP. ELECTRO | 1 | 20% | 50V |
| C020 | CK45B1H152K | CAP. CERAMIC | 1500P | 10% | 50V |
| C021 | NO USE | | | | |
| C022 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |
| C023 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |
| D001 | WZ-090 | DIODE | | | |
| D002 | WZ-090 | DIODE | | | |
| J001 | E31-2367-15 | LEAD WIRE WITH CONNECTOR | | | |
| Q001 | 2SK30A(O) | FET. N-CHANNEL | | | |
| Q002 | 2SA1005(K) | TR. SI, PNP | | | |
| Q003 | 2SA1005(K) | TR. SI, PNP | | | |
| Q004 | 2SC2786(K) | TR. SI, NPN | | | |
| Q005 | 2SC2786(K) | TR. SI, NPN | | | |
| R001 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R002 | RD14BB2E105J | RES. CARBON | 1M | 5% | 1/4W |
| R003 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R004 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R005 | RN14BK2E9003F | RES. METAL FILM | 900K | 1% | 1/4W |
| R006 | RN14BK2E1113F | RES. METAL FILM | 111K | 1% | 1/4W |
| R007 | RD14BB2E820J | RES. CARBON | 82 | 5% | 1/4W |
| R008 | RN14BK2E9903F | RES. METAL FILM | 990K | 1% | 1/4W |
| R009 | RN14BK2E1012F | RES. METAL FILM | 10.1K | 1% | 1/4W |
| R010 | RD14BB2E100J | RES. CARBON | 10 | 5% | 1/4W |
| R011 | RN14BK2E1004F | RES. METAL FILM | 1M | 1% | 1/4W |
| R012 | RD14BB2E104J | RES. CARBON | 100K | 5% | 1/4W |
| R013 | RN14BK2E3900F | RES. METAL FILM | 390 | 1% | 1/4W |
| R014 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R015 | RN14BK2E3900F | RES. METAL FILM | 390 | 1% | 1/4W |
| R016 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R017 | RD14BB2C302J | RES. CARBON | 3K | 5% | 1/6W |
| R018 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R019 | RD14BB2E271J | RES. CARBON | 270 | 5% | 1/4W |
| R020 | NO USE | | | | |
| R021 | RD14BB2E274J | RES. CARBON | 270K | 5% | 1/4W |
| R022 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R023 | RD14BB2E562J | RES. CARBON | 5.6K | 5% | 1/4W |
| R024 | RD14BB2E562J | RES. CARBON | 5.6K | 5% | 1/4W |
| R025 | RD14BB2E392J | RES. CARBON | 3.9K | 5% | 1/4W |
| R026 | RD14BB2E753J | RES. CARBON | 75K | 5% | 1/4W |
| R027 | RD14BB2E754J | RES. CARBON | 750K | 5% | 1/4W |
| R028 | RD14BB2E122J | RES. CARBON | 1.2K | 5% | 1/4W |
| R029 | RD14BB2C332J | RES. CARBON | 3.3K | 5% | 1/6W |
| R030 | RD14BB2E332J | RES. CARBON | 3.3K | 5% | 1/4W |
| R031 | RD14BB2E332J | RES. CARBON | 3.3K | 5% | 1/4W |
| R032 | RD14BB2C561J | RES. CARBON | 560 | 5% | 1/6W |
| R033 | RN14BK2E9100F | RES. METAL FILM | 910 | 1% | 1/4W |
| R034 | RN14BK2E1000F | RES. METAL FILM | 100 | 1% | 1/4W |
| R035 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R036 | RN14BK2E3000F | RES. METAL FILM | 300 | 1% | 1/4W |
| R037 | RN14BK2E1800F | RES. METAL FILM | 180 | 1% | 1/4W |
| R038 | RN14BK2E1200F | RES. METAL FILM | 120 | 1% | 1/4W |
| R039 | RD14BB2E151J | RES. CARBON | 150 | 5% | 1/4W |
| R040 | RD14BB2E560J | RES. CARBON | 56 | 5% | 1/4W |
| R041 | RN14BK2E3000F | RES. METAL FILM | 300 | 1% | 1/4W |
| R042 | RN14BK2E1800F | RES. METAL FILM | 180 | 1% | 1/4W |
| R043 | RN14BK2E1200F | RES. METAL FILM | 120 | 1% | 1/4W |
| R044 | RD14BB2E151J | RES. CARBON | 150 | 5% | 1/4W |
| R045 | RD14BB2E560J | RES. CARBON | 56 | 5% | 1/4W |
| R046 | RD14BB2E333J | RES. CARBON | 33K | 5% | 1/4W |
| R047 | RD14BB2E473J | RES. CARBON | 47K | 5% | 1/4W |
| R048 | RD14BB2E472J | RES. CARBON | 4.7K | 5% | 1/4W |
| R049 | RD14BB2C163J | RES. CARBON | 16K | 5% | 1/6W |
| R050 | RD14BB2C131J | RES. CARBON | 130 | 5% | 1/6W |
| R051 | NO USE | | | | |
| R052 | RD14BB2C910J | RES. CARBON | 91 | 5% | 1/6W |
| R053 | RD14BB2C111J | RES. CARBON | 110 | 5% | 1/6W |
| S001 | S32-4007-05 | SLIDE SWITCH | | | |
| S002 | S02-3501-15 | ROTARY SWITCH | | | |
| TC001 | C05-0427-05 | CAP. TRIMMER | 10P | | |
| TC002 | C05-0428-05 | CAP. TRIMMER | 20P | | |
| TC003 | C05-0427-05 | CAP. TRIMMER | 10P | | |
| TC004 | C05-0428-05 | CAP. TRIMMER | 20P | | |
| TC005 | C05-0427-05 | CAP. TRIMMER | 10P | | |
| U001 | M47F(C) | FET, DUAL SI, N-CHANNEL | | | |
| U002 | 2SA884 | TR. SI, PNP | | | |
| U003 | M47F(B) | FET | | | |
| VR002 | R12-3502-05 | RES. SEMI FIXED 33K B | | | |
| VR003 | R12-3502-05 | RES. SEMI FIXED 33K B | | | |
| VR004 | R12-3502-05 | RES. SEMI FIXED 33K B | | | |

## VERTICAL ATTENUATOR UNIT

### (X75-1140-02)

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| | A22-0828-03 | SUB PANEL | | | |
| | E04-0251-05 | BNC RECEPTACLE | | | |
| | F10-1564-04 | SHIELD PLATE | | | |
| | F10-1566-04 | SHIELD PLATE | | | |
| | J25-2997-13 | PCB (UNMOUNTED) | | | |
| | K21-0852-03 | KNOB | | | |
| | K21-0855-14 | KNOB | | | |
| | N30-3006-46 | SCREW, PAN HD M 3X6 | | | |
| | N89-3006-41 | SCREW, BINDING TAP TITE | | | |
| | R92-0150-05 | JUMPING RES. ZERO OHM | | | |
| C001 | C91-0501-05 | CAP. METAL FILM | 0.047 | 10% | 630V |
| C002 | CM93BD2A470J | CAP. MICA | 47P | 5% | 100V |
| C003 | CM93BD2A471J | CAP. MICA | 470P | 5% | 100V |
| C004 | C91-0502-05 | CAP. METAL FILM | 0.01 | 20% | 630V |
| C005 | NO USE | | | | |
| C006 | CC45CH1H1R5C | CAP. CERAMIC | 1.5P | 0.25P | 50V |
| C007 | NO USE | | | | |
| C008 | CC45CH1H040C | CAP. CERAMIC | 4P | 0.25P | 50V |
| C009 | CC45CH1H680J | CAP. CERAMIC | 68P | 5% | 50V |
| C010 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |
| C011 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |
| C012 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |
| C013 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C014 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C015 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C016 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C017 | CC45CH1H270J | CAP. CERAMIC | 27P | 5% | 50V |
| C018 | CC45CH1H020C | CAP. CERAMIC | 2P | 0.25P | 50V |
| C024 | CC45CH1H270J | CAP. CERAMIC | 27P | 5% | 50V |
| D001 | MTZ9.1JC | DIODE, ZENER | 9V | | |
| D002 | MTZ9.1JC | DIODE, ZENER | 9V | | |
| J001 | E31-2367-15 | LEAD WIRE WITH CONNECTOR | | | |
| Q001 | 2SK30A(O) | FET. N-CHANNEL | | | |
| Q002 | 2SA1005(K) | TR. SI, PNP | | | |
| Q003 | 2SA1005(K) | TR. SI, PNP | | | |
| Q004 | 2SC2786(K) | TR. SI, NPN | | | |
| R001 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R002 | RD14BB2E105J | RES. CARBON | 1M | 5% | 1/4W |
| R003 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R004 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R005 | RN14BK2E9003F | RES. METAL FILM | 900K | 1% | 1/4W |
| R006 | RN14BK2E1113F | RES. METAL FILM | 111K | 1% | 1/4W |
| R007 | RD14BB2E820J | RES. CARBON | 82 | 5% | 1/4W |
| R008 | RN14BK2E9903F | RES. METAL FILM | 990K | 1% | 1/4W |
| R009 | RN14BK2E1012F | RES. METAL FILM | 10.1K | 1% | 1/4W |
| R010 | RD14BB2E100J | RES. CARBON | 10 | 5% | 1/4W |
| R011 | RN14BK2E1004F | RES. METAL FILM | 1M | 1% | 1/4W |
| R012 | RD14BB2E104J | RES. CARBON | 100K | 5% | 1/4W |
| R013 | RN14BK2E27R0F | RES. METAL FILM | 27.0 | 1% | 1/4W |
| R014 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R015 | RN14BK2E27R0F | RES. METAL FILM | 27.0 | 1% | 1/4W |
| R016 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R017 | NO USE | | | | |
| R018 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |

# PARTS LIST

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| R019 | RD14BB2E121J | RES. CARBON | 120 | 5% | 1/4W |
| R020 | RD14BB2E473J | RES. CARBON | 47K | 5% | 1/4W |
| R021 | RD14BB2E474J | RES. CARBON | 470K | 5% | 1/4W |
| R022 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R023 | RD14BB2E562J | RES. CARBON | 5.6K | 5% | 1/4W |
| R024 | RD14BB2E562J | RES. CARBON | 5.6K | 5% | 1/4W |
| R025 | RD14BB2E392J | RES. CARBON | 3.9K | 5% | 1/4W |
| R026 | RD14BB2E753J | RES. CARBON | 75K | 5% | 1/4W |
| R027 | RD14BB2E754J | RES. CARBON | 750K | 5% | 1/4W |
| R028 | RD14BB2E122J | RES. CARBON | 1.2K | 5% | 1/4W |
| R029 | RD14BB2C332J | RES. CARBON | 3.3K | 5% | 1/6W |
| R030 | RD14BB2E332J | RES. CARBON | 3.3K | 5% | 1/4W |
| R031 | RD14BB2E332J | RES. CARBON | 3.3K | 5% | 1/4W |
| R032 | NO USE | | | | |
| R033 | RN14BK2E9100F | RES. METAL FILM | 910 | 1% | 1/4W |
| R034 | RN14BK2E1000F | RES. METAL FILM | 100 | 1% | 1/4W |
| R035 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R036 | RN14BK2E3000F | RES. METAL FILM | 300 | 1% | 1/4W |
| R037 | RN14BK2E1800F | RES. METAL FILM | 180 | 1% | 1/4W |
| R038 | RN14BK2E1200F | RES. METAL FILM | 120 | 1% | 1/4W |
| R039 | RD14BB2E151J | RES. CARBON | 150 | 5% | 1/4W |
| R040 | RD14BB2E560J | RES. CARBON | 56 | 5% | 1/4W |
| R041 | RN14BK2E3000F | RES. METAL FILM | 300 | 1% | 1/4W |
| R042 | RN14BK2E1800F | RES. METAL FILM | 180 | 1% | 1/4W |
| R043 | RN14BK2E1200F | RES. METAL FILM | 120 | 1% | 1/4W |
| R044 | RD14BB2E161J | RES. CARBON | 160 | 5% | 1/4W |
| R045 | RD14BB2E560J | RES. CARBON | 56 | 5% | 1/4W |
| R046 | RD14BB2E153J | RES. CARBON | 15K | 5% | 1/4W |
| R051 | RD14BB2E361J | RES. CARBON | 360 | 5% | 1/4W |
| R052 | RD14BB2C910J | RES. CARBON | 91 | 5% | 1/6W |
| R053 | RD14BB2C111J | RES. CARBON | 110 | 5% | 1/6W |
| S001 | S32-4007-05 | SLIDE SWITCH | | | |
| S002 | S02-3501-15 | ROTARY SWITCH | | | |
| TC001 | C05-0427-05 | CAP. TRIMMER | 10P | | |
| TC002 | C05-0428-05 | CAP. TRIMMER | 20P | | |
| TC003 | C05-0427-05 | CAP. TRIMMER | 10P | | |
| TC004 | C05-0428-05 | CAP. TRIMMER | 20P | | |
| TC005 | C05-0427-05 | CAP. TRIMMER | 10P | | |
| U001 | M47F(C) | FET, DUAL SI, N-CHANNEL | | | |
| U002 | NO USE | | | | |
| U003 | M47F(B) | FET | | | |
| VR001 | R12-3502-05 | RES. SEMI FIXED | 33K B | | |
| VR002 | R12-3502-05 | RES. SEMI FIXED | 33K B | | |
| VR003 | R12-3502-05 | RES. SEMI FIXED | 33K B | | |
| VR004 | R12-3502-05 | RES. SEMI FIXED | 33K B | | |
| VR005 | S02-3501-15 | ROTARY SWITCH | | | |

## VERTICAL ATTENUATOR UNIT

### (X75-1140-03)

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| | A22-0828-03 | SUB PANEL | | | |
| | E04-0251-05 | BNC RECEPTACLE | | | |
| | F10-1564-04 | SHIELD PLATE | | | |
| | F10-1566-04 | SHIELD PLATE | | | |
| | J25-2997-13 | PCB (UNMOUNTED) | | | |
| | K21-0852-03 | KNOB | | | |
| | K21-0855-14 | KNOB | | | |
| | N30-3006-46 | SCREW, PAN HD | M 3X6 | | |
| | N89-3006-41 | SCREW, BINDING TAP TITE | | | |
| | R92-0150-05 | JUMPING RES. | ZERO OHM | | |
| C001 | C91-0501-05 | CAP. METAL FILM | 0.047 | 10% | 630V |
| C002 | CM93B02A470J | CAP. MICA | 47P | 5% | 100V |
| C003 | CM93B02A471J | CAP. MICA | 470P | 5% | 100V |
| C004 | C91-0502-05 | CAP. METAL FILM | 0.01 | 20% | 630V |
| C005 | NO USE | | | | |
| C006 | CC45CH1H1R5C | CAP. CERAMIC | 1.5P | 0.25P | 50V |
| C007 | NO USE | | | | |
| C008 | CC45CH1H040C | CAP. CERAMIC | 4P | 0.25P | 50V |
| C009 | CC45CH1H680J | CAP. CERAMIC | 68P | 5% | 50V |
| C010 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |
| C011 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |
| C012 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |
| C013 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C014 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C015 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C016 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C017 | CC45CH1H270J | CAP. CERAMIC | 27P | 5% | 50V |
| C018 | CC45CH1H020C | CAP. CERAMIC | 2P | 0.25P | 50V |
| C024 | CC45CH1H270J | CAP. CERAMIC | 27P | 5% | 50V |
| D001 | MTZ9.1JC | DIODE, ZENER | 9V | | |
| D002 | MTZ9.1JC | DIODE, ZENER | 9V | | |
| J001 | E31-2367-15 | LEAD WIRE WITH CONNECTOR | | | |
| Q001 | 2SK30A(D) | FET, N-CHANNEL | | | |
| Q002 | 2SA1005(K) | TR. SI, PNP | | | |
| Q003 | 2SA1005(K) | TR. SI, PNP | | | |
| Q004 | 2SC2786(K) | TR. SI, NPN | | | |
| R001 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R002 | RD14BB2E105J | RES. CARBON | 1M | 5% | 1/4W |
| R003 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R004 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R005 | RN14BK2E9003F | RES. METAL FILM | 900K | 1% | 1/4W |
| R006 | RN14BK2E1113F | RES. METAL FILM | 111K | 1% | 1/4W |
| R007 | RD14BB2E820J | RES. CARBON | 82 | 5% | 1/4W |
| R008 | RN14BK2E9903F | RES. METAL FILM | 990K | 1% | 1/4W |
| R009 | RN14BK2E1012F | RES. METAL FILM | 10.1K | 1% | 1/4W |
| R010 | RD14BB2E100J | RES. CARBON | 10 | 5% | 1/4W |
| R011 | RN14BK2E1004F | RES. METAL FILM | 1M | 1% | 1/4W |
| R012 | RD14BB2E104J | RES. CARBON | 100K | 5% | 1/4W |
| R013 | RN14BK2E27R0F | RES. METAL FILM | 27.0 | 1% | 1/4W |
| R014 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R015 | RN14BK2E27R0F | RES. METAL FILM | 27.0 | 1% | 1/4W |
| R016 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R017 | NO USE | | | | |
| R018 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R019 | RD14BB2E121J | RES. CARBON | 120 | 5% | 1/4W |
| R020 | RD14BB2E473J | RES. CARBON | 47K | 5% | 1/4W |
| R021 | RD14BB2E474J | RES. CARBON | 470K | 5% | 1/4W |
| R022 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R023 | RD14BB2E562J | RES. CARBON | 5.6K | 5% | 1/4W |
| R024 | RD14BB2E562J | RES. CARBON | 5.6K | 5% | 1/4W |
| R025 | RD14BB2E392J | RES. CARBON | 3.9K | 5% | 1/4W |
| R026 | RD14BB2E753J | RES. CARBON | 75K | 5% | 1/4W |
| R027 | RD14BB2E754J | RES. CARBON | 750K | 5% | 1/4W |
| R028 | RD14BB2E122J | RES. CARBON | 1.2K | 5% | 1/4W |
| R029 | RD14BB2C332J | RES. CARBON | 3.3K | 5% | 1/6W |
| R030 | RD14BB2E332J | RES. CARBON | 3.3K | 5% | 1/4W |
| R031 | RD14BB2E332J | RES. CARBON | 3.3K | 5% | 1/4W |
| R032 | NO USE | | | | |
| R033 | RN14BK2E9100F | RES. METAL FILM | 910 | 1% | 1/4W |
| R034 | RN14BK2E1000F | RES. METAL FILM | 100 | 1% | 1/4W |
| R035 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R036 | RN14BK2E3000F | RES. METAL FILM | 300 | 1% | 1/4W |
| R037 | RN14BK2E1800F | RES. METAL FILM | 180 | 1% | 1/4W |
| R038 | RN14BK2E1200F | RES. METAL FILM | 120 | 1% | 1/4W |
| R039 | RD14BB2E151J | RES. CARBON | 150 | 5% | 1/4W |
| R040 | RD14BB2E560J | RES. CARBON | 56 | 5% | 1/4W |
| R041 | RN14BK2E3000F | RES. METAL FILM | 300 | 1% | 1/4W |
| R042 | RN14BK2E1800F | RES. METAL FILM | 180 | 1% | 1/4W |
| R043 | RN14BK2E1200F | RES. METAL FILM | 120 | 1% | 1/4W |
| R044 | RD14BB2E161J | RES. CARBON | 160 | 5% | 1/4W |
| R045 | RD14BB2E560J | RES. CARBON | 56 | 5% | 1/4W |
| R046 | RD14BB2E153J | RES. CARBON | 15K | 5% | 1/4W |
| R051 | RD14BB2E361J | RES. CARBON | 360 | 5% | 1/4W |
| R052 | RD14BB2C910J | RES. CARBON | 91 | 5% | 1/6W |
| R053 | RD14BB2C111J | RES. CARBON | 110 | 5% | 1/6W |
| S001 | S32-4007-05 | SLIDE SWITCH | | | |
| S002 | S02-3501-15 | ROTARY SWITCH | | | |
| TC001 | C05-0427-05 | CAP. TRIMMER | 10P | | |
| TC002 | C05-0428-05 | CAP. TRIMMER | 20P | | |
| TC003 | C05-0427-05 | CAP. TRIMMER | 10P | | |
| TC004 | C05-0428-05 | CAP. TRIMMER | 20P | | |
| TC005 | C05-0427-05 | CAP. TRIMMER | 10P | | |
| U001 | M47F(C) | FET, DUAL SI, N-CHANNEL | | | |
| U002 | NO USE | | | | |
| U003 | M47F(B) | FET | | | |
| VR001 | R12-3502-05 | RES. SEMI FIXED | 33K B | | |
| VR002 | R12-3502-05 | RES. SEMI FIXED | 33K B | | |
| VR003 | R12-3502-05 | RES. SEMI FIXED | 33K B | | |
| VR004 | R12-3502-05 | RES. SEMI FIXED | 33K B | | |
| VR005 | S02-3501-15 | ROTARY SWITCH | | | |

## VERTICAL AMP & POWER UNIT

### (X73-1490-00)

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| | E23-0526-04 | EARTH PLATE | | | |
| | E33-4031-00 | WIRE ASSY | | | |
| | F01-0835-05 | HEAT SINK | | | |
| | F01-0836-04 | HEAT SINK | | | |
| | J25-2999-13 | PCB (UNMOUNTED) | | | |
| | J61-0517-05 | STADOFF CLIP | | | |
| | N19-0191-05 | WASHER NONMETAL | | | |
| | N19-0702-04 | WASHER | | | |
| | N30-3008-46 | SCREW, PAN HD | M 3X8 | | |
| | R92-0150-05 | JUMPING RES. | ZERO OHM | | |
| | Z12-1018-05 | TUBE (PLASTIC) | | | |
| | Z12-2014-05 | TUBE (PLASTIC) | | | |
| C002 | CC45CH1H1R5C | CAP. CERAMIC | 1.5P | 0.25P | 50V |
| C006 | CC45CH1H221J | CAP. CERAMIC | 220P | 5% | 50V |
| C007 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |

# PARTS LIST

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| C008 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C009 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C010 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C011 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C012 | NO USE | | | | |
| C013 | CC45CH1H470J | CAP. CERAMIC | 47P | 5% | 50V |
| C014 | CE04W1E220M | CAP. ELECTRO | 22 | 20% | 25V |
| C015 | NO USE | | | | |
| C016 | CE04W1E220M | CAP. ELECTRO | 22 | 20% | 25V |
| C017 | CE04BW1E220M | CAP. ELECTRO | 22 | 20% | 25V |
| C020 | CC45CH1H1R5C | CAP. CERAMIC | 1.5P | 0.25P | 50V |
| C102 | CC45CH1H010C | CAP. CERAMIC | 1P | 0.25P | 50V |
| C103 | NO USE | | | | |
| C104 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C105 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C106 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C107 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C108 | NO USE | | | | |
| C109 | CC45CH1H470J | CAP. CERAMIC | 47P | 5% | 50V |
| C110 | CC45CH1H470J | CAP. CERAMIC | 47P | 5% | 50V |
| C111 | CE04BW1H010M | CAP. ELECTRO | 1 | 20% | 50V |
| C112 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |
| C115 | CC45CH1H020C | CAP. CERAMIC | 2P | 0.25P | 50V |
| C301 | CE04W1V222M | CAP. ELECTRO | 2200 | 20% | 35V |
| C302 | CE04W1V222M | CAP. ELECTRO | 2200 | 20% | 35V |
| C303 | CE04W1E222M | CAP. ELECTRO | 2200 | 20% | 25V |
| C304 | C90-0910-05 | CAP. ELECTRO | 100 | 20% | 200V |
| C305 | CE04W2E470 | CAP. ELECTRO | 47 | | 250V |
| C306 | CE04W1A101M | CAP. ELECTRO | 100 | 20% | 10V |
| C307 | CE04W1E101M | CAP. ELECTRO | 100 | 20% | 25V |
| C308 | CE04W1E101M | CAP. ELECTRO | 100 | 20% | 25V |
| C309 | CE04W2C100 | CAP. ELECTRO | 10 | | 160V |
| C310 | CE04W2E010 | CAP. ELECTRO | 1 | | 250V |
| C311 | CE04BW1H010M | CAP. ELECTRO | 1 | 20% | 50V |
| C312 | CE04W1H010M | CAP. ELECTRO | 1 | 20% | 50V |
| C313 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |
| C314 | CE04W1H010M | CAP. ELECTRO | 1 | 20% | 50V |
| C315 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |
| C316 | CE04W1H010M | CAP. ELECTRO | 1 | 20% | 50V |
| C317 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |
| C318 | CK45B1H102K | CAP. CERAMIC | 1000P | 10% | 50V |
| C319 | CK45B1H102K | CAP. CERAMIC | 1000P | 10% | 50V |
| C320 | CK45B2H103K | CAP. CERAMIC | 0.01 | 10% | 500V |
| D001 | DS442X | DIODE | | | |
| D002 | DS442X | DIODE | | | |
| D003 | DS442X | DIODE | | | |
| D101 | DS442X | DIODE | | | |
| D102 | DS442X | DIODE | | | |
| D103 | DS442X | DIODE | | | |
| D104 | DS442X | DIODE | | | |
| D105 | DS442X | DIODE | | | |
| D106 | DS442X | DIODE | | | |
| D107 | DS442X | DIODE | | | |
| D108 | MTZ10JC | DIODE, ZENER | 10V | | |
| D301 | S2VB40F | DIODE, BRIDGE | | | |
| D302 | S2VB40F | DIODE, BRIDGE | | | |
| D303 | S1VB60 | DIODE | | | |
| D304 | S1VB60 | DIODE | | | |
| D305 | DS442X | DIODE | | | |
| D306 | DS442X | DIODE | | | |
| D307 | V06B | DIODE | | | |
| L001 | L40-1025-03 | FERRI INDUCTOR | | | |
| L002 | L40-1025-03 | FERRI INDUCTOR | | | |
| P001 | E40-0473-05 | PIN CONNECTOR | 4 P | | |
| P002 | E40-0273-05 | PIN CONNECTOR | 2 P | | |
| P003 | E04-0154-05 | BNC RECEPTACLE | | | |
| P004 | E23-0046-04 | TERMINAL | | | |
| P005 | E23-0046-04 | TERMINAL | | | |
| P101 | E40-0473-05 | PIN CONNECTOR | 4 P | | |
| P301 | E40-0930-05 | PIN CONNECTOR | 9P | | |
| P302 | E40-1116-05 | PIN CONNECTOR | 11P | | |
| P303 | E40-1116-05 | PIN CONNECTOR | 11P | | |
| Q002 | 2SA1005(K) | TR. SI, PNP | | | |
| Q003 | 2SA1005(K) | TR. SI, PNP | | | |
| Q004 | 2SC2786(K) | TR. SI, NPN | | | |
| Q005 | 2SC2786(K) | TR. SI, NPN | | | |
| Q006 | 2SC2786(K) | TR. SI, NPN | | | |
| Q007 | 2SC2786(K) | TR. SI, NPN | | | |
| Q008 | 2SA1005(K) | TR. SI, PNP | | | |
| Q009 | 2SC2786(K) | TR. SI, NPN | | | |
| Q010 | 2SC2786(K) | TR. SI, NPN | | | |
| Q011 | 2SC2786(K) | TR. SI, NPN | | | |
| Q012 | 2SC2786(K) | TR. SI, NPN | | | |
| Q013 | 2SC2786(K) | TR. SI, NPN | | | |

| REF.NO | PARTS NO | NAME & DESCRIPTION |
|---|---|---|
| Q014 | 2SC2786(K) | TR. SI, NPN |
| Q015 | 2SC2407 | TR. SI, NPN |
| Q016 | 2SC2407 | TR. SI, NPN |
| Q017 | 2SC2912(R,S) | TR. SI, NPN |
| Q018 | 2SC2912(R,S) | TR. SI, NPN |
| Q102 | 2SA1005(K) | TR. SI, PNP |
| Q103 | 2SA1005(K) | TR. SI, PNP |
| Q104 | 2SC2786(K) | TR. SI, NPN |
| Q105 | 2SC2786(K) | TR. SI, NPN |
| Q106 | 2SC2785(F) | TR. SI, NPN |
| Q107 | 2SC2786(K) | TR. SI, NPN |
| Q108 | 2SC2786(K) | TR. SI, NPN |
| Q109 | 2SC2786(K) | TR. SI, NPN |
| Q110 | 2SC2786(K) | TR. SI, NPN |
| Q111 | 2SC2786(K) | TR. SI, NPN |
| Q112 | 2SC2786(K) | TR. SI, NPN |
| Q113 | 2SA1175(F) | TR. SI, PNP |
| Q114 | 2SC2785(F) | TR. SI, NPN |
| Q115 | 2SC2786(K) | TR. SI, NPN |
| Q301 | 2SA1009(L,K) | TR. SI, PNP |
| Q302 | 2SA1009(L,K) | TR. SI, PNP |
| Q303 | 2SA1175(F) | TR. SI, PNP |
| Q304 | 2SA1175(F) | TR. SI, PNP |
| Q305 | 2SC2271(E) | TR. SI, NPN |
| Q306 | 2SC2271(E) | TR. SI, NPN |

| | | | | | |
|---|---|---|---|---|---|
| R001 | RD14BB2E105J | RES. CARBON | 1M | 5% | 1/4W |
| R002 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R003 | RD14BB2E562J | RES. CARBON | 5.6K | 5% | 1/4W |
| R004 | RD14BB2E562J | RES. CARBON | 5.6K | 5% | 1/4W |
| R005 | RD14BB2E120J | RES. CARBON | 12 | 5% | 1/4W |
| R006 | RD14BB2E510J | RES. CARBON | 51 | 5% | 1/4W |
| R007 | RD14BB2E510J | RES. CARBON | 51 | 5% | 1/4W |
| R008 | RD14BB2E392J | RES. CARBON | 3.9K | 5% | 1/4W |
| R009 | RD14BB2E102J | RES. CARBON | 1K | 5% | 1/4W |
| R010 | RD14BB2E302J | RES. CARBON | 3K | 5% | 1/4W |
| R011 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R012 | RD14BB2E243J | RES. CARBON | 24K | 5% | 1/4W |
| R013 | RD14BB2E302J | RES. CARBON | 3K | 5% | 1/4W |
| R014 | RN14BK2E1000F | RES. METAL FILM | 100 | 1% | 1/4W |
| R015 | RN14BK2E1301F | RES. METAL FILM | 1.3K | 1% | 1/4W |
| R016 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R017 | RD14BB2E302J | RES. CARBON | 3K | 5% | 1/4W |
| R018 | RD14BB2E104J | RES. CARBON | 100K | 5% | 1/4W |
| R019 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R020 | RD14BB2E331J | RES. CARBON | 330 | 5% | 1/4W |
| R021 | RD14BB2E331J | RES. CARBON | 330 | 5% | 1/4W |
| R022 | NO USE | | | | |
| R023 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R024 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R025 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R026 | RD14BB2E152J | RES. CARBON | 1.5K | 5% | 1/4W |
| R027 | RD14BB2E152J | RES. CARBON | 1.5K | 5% | 1/4W |
| R028 | RD14BB2E270J | RES. CARBON | 27 | 5% | 1/4W |
| R029 | RD14BB2E270J | RES. CARBON | 27 | 5% | 1/4W |
| R030 | RD14BB2E100J | RES. CARBON | 10 | 5% | 1/4W |
| R031 | RD14BB2E151J | RES. CARBON | 150 | 5% | 1/4W |
| R032 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R033 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R034 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R035 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R036 | RN14BK2E2201F | RES. METAL FILM | 2.2K | 1% | 1/4W |
| R037 | RN14BK2E2201F | RES. METAL FILM | 2.2K | 1% | 1/4W |
| R038 | RD14BB2E750J | RES. CARBON | 75 | 5% | 1/4W |
| R039 | RD14BB2E431J | RES. CARBON | 430 | 5% | 1/4W |
| R040 | RD14BB2E682J | RES. CARBON | 6.8K | 5% | 1/4W |
| R041 | RD14BB2E332J | RES. CARBON | 3.3K | 5% | 1/4W |
| R042 | RD14BB2E471J | RES. CARBON | 470 | 5% | 1/4W |
| R043 | RD14BB2E471J | RES. CARBON | 470 | 5% | 1/4W |
| R044 | RN14BK2E8200F | RES. METAL FILM | 820 | 1% | 1/4W |
| R045 | RN14BK2E8200F | RES. METAL FILM | 820 | 1% | 1/4W |
| R046 | RN14BK2E8200F | RES. METAL FILM | 820 | 1% | 1/4W |
| R047 | RN14BK2E8200F | RES. METAL FILM | 820 | 1% | 1/4W |
| R048 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R049 | RD14BB2E302J | RES. CARBON | 3K | 5% | 1/4W |
| R050 | RD14BB2E302J | RES. CARBON | 3K | 5% | 1/4W |
| R051 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R052 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R053 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R054 | RD14BB2E201J | RES. CARBON | 200 | 5% | 1/4W |
| R055 | RD14BB2E201J | RES. CARBON | 200 | 5% | 1/4W |
| R056 | RD14BB2E121J | RES. CARBON | 120 | 5% | 1/4W |
| R057 | NO USE | | | | |
| R058 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R059 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R060 | RS14GB3F681J | RES. METAL FILM | 680 | 5% | 3W |
| R061 | RS14GB3F681J | RES. METAL FILM | 680 | 5% | 3W |
| R062 | RS14GB3F681J | RES. METAL FILM | 680 | 5% | 3W |
| R063 | RS14GB3F681J | RES. METAL FILM | 680 | 5% | 3W |
| R064 | RD14BB2E104J | RES. CARBON | 100K | 5% | 1/4W |
| R065 | RD14BB2E201J | RES. CARBON | 200 | 5% | 1/4W |
| R066 | RD14BB2E511J | RES. CARBON | 510 | 5% | 1/4W |
| R067 | RD14BB2E562J | RES. CARBON | 5.6K | 5% | 1/4W |
| R068 | RD14BB2E104J | RES. CARBON | 100K | 5% | 1/4W |

# PARTS LIST

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| R069 | RD14BB2E223J | RES. CARBON | 22K | 5% | 1/4W |
| R101 | RD14BB2E105J | RES. CARBON | 1M | 5% | 1/4W |
| R102 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R103 | RD14BB2E562J | RES. CARBON | 5.6K | 5% | 1/4W |
| R104 | RD14BB2E562J | RES. CARBON | 5.6K | 5% | 1/4W |
| R105 | RD14BB2E120J | RES. CARBON | 12 | 5% | 1/4W |
| R106 | RD14BB2E510J | RES. CARBON | 51 | 5% | 1/4W |
| R107 | RD14BB2E510J | RES. CARBON | 51 | 5% | 1/4W |
| R108 | RD14BB2E392J | RES. CARBON | 3.9K | 5% | 1/4W |
| R109 | RD14BB2E102J | RES. CARBON | 1K | 5% | 1/4W |
| R110 | RD14BB2E302J | RES. CARBON | 3K | 5% | 1/4W |
| R111 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R112 | RD14BB2E243J | RES. CARBON | 24K | 5% | 1/4W |
| R113 | RD14BB2E302J | RES. CARBON | 3K | 5% | 1/4W |
| R114 | RN14BK2E1000F | RES. METAL FILM | 100 | 1% | 1/4W |
| R115 | RD14BB2E104J | RES. CARBON | 100K | 5% | 1/4W |
| R116 | RN14BK2E1301F | RES. METAL FILM | 1.3K | 1% | 1/4W |
| R117 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R118 | RD14BB2E182J | RES. CARBON | 1.8K | 5% | 1/4W |
| R119 | RD14BB2E223J | RES. CARBON | 22K | 5% | 1/4W |
| R120 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R121 | RD14BB2E561J | RES. CARBON | 560 | 5% | 1/4W |
| R122 | NO USE | | | | |
| R123 | RD14BB2E333J | RES. CARBON | 33K | 5% | 1/4W |
| R124 | RD14BB2E151J | RES. CARBON | 150 | 5% | 1/4W |
| R125 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R126 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R127 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R128 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R129 | RN14BK2E2201F | RES. METAL FILM | 2.2K | 1% | 1/4W |
| R130 | RN14BK2E2201F | RES. METAL FILM | 2.2K | 1% | 1/4W |
| R131 | RD14BB2E750J | RES. CARBON | 75 | 5% | 1/4W |
| R132 | RN14BK2E2001F | RES. METAL FILM | 2K | 1% | 1/4W |
| R133 | RN14BK2E2001F | RES. METAL FILM | 2K | 1% | 1/4W |
| R134 | RD14BB2E510J | RES. CARBON | 51 | 5% | 1/4W |
| R135 | RD14BB2E511J | RES. CARBON | 510 | 5% | 1/4W |
| R136 | RD14BB2E123J | RES. CARBON | 12K | 5% | 1/4W |
| R137 | RD14BB2E472J | RES. CARBON | 4.7K | 5% | 1/4W |
| R138 | RD14BB2E332J | RES. CARBON | 3.3K | 5% | 1/4W |
| R139 | RD14BB2E332J | RES. CARBON | 3.3K | 5% | 1/4W |
| R140 | RD14BB2E471J | RES. CARBON | 470 | 5% | 1/4W |
| R141 | RD14BB2E471J | RES. CARBON | 470 | 5% | 1/4W |
| R142 | RD14BB2E471J | RES. CARBON | 470 | 5% | 1/4W |
| R143 | RD14BB2E471J | RES. CARBON | 470 | 5% | 1/4W |
| R144 | RD14BB2E272J | RES. CARBON | 2.7K | 5% | 1/4W |
| R145 | RD14BB2E153J | RES. CARBON | 15K | 5% | 1/4W |
| R146 | RD14BB2E153J | RES. CARBON | 15K | 5% | 1/4W |
| R147 | RD14BB2E272J | RES. CARBON | 2.7K | 5% | 1/4W |
| R148 | RD14BB2E223J | RES. CARBON | 22K | 5% | 1/4W |
| R149 | RD14BB2E682J | RES. CARBON | 6.8K | 5% | 1/4W |
| R150 | RD14BB2E102J | RES. CARBON | 1K | 5% | 1/4W |
| R151 | RD14BB2E102J | RES. CARBON | 1K | 5% | 1/4W |
| R152 | RD14BB2E151J | RES. CARBON | 150 | 5% | 1/4W |
| R153 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R154 | NO USE | | | | |
| R155 | RD14BB2E470J | RES. CARBON | 47 | 5% | 1/4W |
| R156 | NO USE | | | | |
| R157 | RD14BB2E102J | RES. CARBON | 1K | 5% | 1/4W |
| R158 | RD14BB2E104J | RES. CARBON | 100K | 5% | 1/4W |
| R159 | RD14BB2E682J | RES. CARBON | 6.8K | 5% | 1/4W |
| R301 | RD14BB2E473J | RES. CARBON | 47K | 5% | 1/4W |
| R302 | RD14BB2E102J | RES. CARBON | 1K | 5% | 1/4W |
| R303 | RD14BB2E3R3J | RES. CARBON | 3.3 | 5% | 1/4W |
| R304 | RD14BB2E100J | RES. CARBON | 10 | 5% | 1/4W |
| R305 | RD14BB2E562J | RES. CARBON | 5.6K | 5% | 1/4W |
| R306 | RD14BB2E822J | RES. CARBON | 8.2K | 5% | 1/4W |
| R307 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R308 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R309 | RN14BK2E1502F | RES. METAL FILM | 15K | 1% | 1/4W |
| R310 | RN14BK2E1003F | RES. METAL FILM | 100K | 1% | 1/4W |
| R311 | RN14BK2E1602F | RES. METAL FILM | 16K | 1% | 1/4W |
| R312 | RN14BK2E1503F | RES. METAL FILM | 150K | 1% | 1/4W |
| R313 | RD14BY2H104J | RES. CARBON | 100K | 5% | 1/2W |
| R314 | RD14BY2H104J | RES. CARBON | 100K | 5% | 1/2W |
| S101 | S42-4509-05 | PUSH SWITCH | | | |
| TC001 | C05-0425-05 | CAP. TRIMMER | 70P | | |
| TC002 | C05-0425-05 | CAP. TRIMMER | 70P | | |
| TC101 | C05-0434-05 | CAP. TRIMMER | 20P | | |
| TC102 | C05-0434-05 | CAP. TRIMMER | 20P | | |
| TP001 | E23-0046-04 | TERMINAL | | | |
| TP002 | E23-0046-04 | TERMINAL | | | |
| TP003 | E23-0046-04 | TERMINAL | | | |
| TP004 | E23-0046-04 | TERMINAL | | | |
| TP101 | E23-0046-04 | TERMINAL | | | |
| TP102 | E23-0046-04 | TERMINAL | | | |
| TP103 | E23-0046-04 | TERMINAL | | | |
| TP104 | E23-0046-04 | TERMINAL | | | |
| U001 | M47F(B) | FET | | | |

| REF.NO | PARTS NO | NAME & DESCRIPTION | |
|---|---|---|---|
| U101 | M47F(B) | FET | |
| U301 | UPC7805H | IC | |
| U302 | UPC7915HA | IC | |
| U303 | NJM7815 | IC | |
| U304 | NJM4558D | IC | |
| VR001 | R05-3506-05 | V.R. | 20K B |
| VR002 | NO USE | | |
| VR003 | R12-0539-05 | RES. SEMI FIXED | 200 B |
| VR004 | R12-0421-05 | RES. SEMI FIXED | 100 B |
| VR005 | R12-0421-05 | RES. SEMI FIXED | 100 B |
| VR006 | R12-0421-05 | RES. SEMI FIXED | 100 B |
| VR101 | R05-3506-05 | V.R. | 20K B |
| VR102 | R12-3523-05 | RES. SEMI FIXED | 20K B |
| VR103 | R12-0541-05 | RES. SEMI FIXED | 100 B |
| VR104 | R12-0543-05 | RES. SEMI FIXED | 500 B |

## VERTICAL AMP & POWER UNIT

## (X73-1490-01)

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| | E33-4032-00 | WIRE ASSY | | | |
| | F01-0835-05 | HEAT SINK | | | |
| | F01-0836-04 | HEAT SINK | | | |
| | J25-2999-03 | PCB (UNMOUNTED) | | | |
| | J61-0517-05 | STADOFF CLIP | | | |
| | N19-0191-05 | WASHER NONMETAL | | | |
| | N30-3008-46 | SCREW, PAN HD | M 3X8 | | |
| | R92-0150-05 | JUMPING RES. | ZERO OHM | | |
| | 212-2014-05 | TUBE (PLASTIC) | | | |
| C002 | CC45CH1H1R5C | CAP. CERAMIC | 1.5P | 0.25P | 50V |
| C006 | CC45CH1H221J | CAP. CERAMIC | 220P | 5% | 50V |
| C007 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |
| C008 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C009 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C010 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C011 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C012 | NO USE | | | | |
| C013 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |
| C014 | CE04W1E220M | CAP. ELECTRO | 22 | 20% | 25V |
| C015 | NO USE | | | | |
| C016 | CE04W1E220M | CAP. ELECTRO | 22 | 20% | 25V |
| C017 | CE04BW1E220M | CAP. ELECTRO | 22 | 20% | 25V |
| C020 | CC45CH1H1R5C | CAP. CERAMIC | 1.5P | 0.25P | 50V |
| C301 | CE04W1V222M | CAP. ELECTRO | 2200 | 20% | 35V |
| C302 | CE04W1V222M | CAP. ELECTRO | 2200 | 20% | 35V |
| C303 | CE04W1E222M | CAP. ELECTRO | 2200 | 20% | 25V |
| C304 | C90-0910-05 | CAP. ELECTRO | 100 | 20% | 200V |
| C305 | CE04W2E470M | CAP. ELECTRO | 47 | 20% | 250V |
| C306 | CE04W1A101M | CAP. ELECTRO | 100 | 20% | 10V |
| C307 | CE04W1E101M | CAP. ELECTRO | 100 | 20% | 25V |
| C308 | CE04W1E101M | CAP. ELECTRO | 100 | 20% | 25V |
| C309 | CE04W2C100M | CAP. ELECTRO | 10 | 20% | 160V |
| C310 | CE04W2E010M | CAP. ELECTRO | 1 | 20% | 250V |
| C311 | CE04BW1H010M | CAP. ELECTRO | 1 | 20% | 50V |
| C312 | CE04W1H010M | CAP. ELECTRO | 1 | 20% | 50V |
| C313 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |
| C314 | CE04W1H010M | CAP. ELECTRO | 1 | 20% | 50V |
| C315 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |
| C316 | CE04W1H010M | CAP. ELECTRO | 1 | 20% | 50V |
| C317 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |
| C318 | CK45B1H102K | CAP. CERAMIC | 1000P | 10% | 50V |
| C319 | CK45B1H102K | CAP. CERAMIC | 1000P | 10% | 50V |
| C320 | CK45B2H103K | CAP. CERAMIC | 0.01 | 10% | 500V |
| D001 | DS442X | DIODE | | | |
| D002 | DS442X | DIODE | | | |
| D003 | DS442X | DIODE | | | |
| D301 | S2VB40F | DIODE, BRIDGE | | | |
| D302 | S2VB40F | DIODE, BRIDGE | | | |
| D303 | S10B60 | DIODE | | | |
| D304 | S10B60 | DIODE | | | |
| D305 | DS442X | DIODE | | | |
| D306 | DS442X | DIODE | | | |
| D307 | V06B | DIODE | | | |
| L001 | L40-1025-03 | FERRI INDUCTOR | | | |
| L002 | L40-1025-03 | FERRI INDUCTOR | | | |
| P001 | E40-0473-05 | PIN CONNECTOR | 4P | | |
| P002 | E40-0273-05 | PIN CONNECTOR | 2P | | |
| P003 | E04-0154-05 | BNC RECEPTACLE | | | |
| P301 | E40-0930-05 | PIN CONNECTOR | 9P | | |
| P302 | E40-1116-05 | PIN CONNECTOR | 11P | | |
| P303 | E40-1116-05 | PIN CONNECTOR | 11P | | |

# PARTS LIST

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| Q002 | 2SA1005(K) | TR. SI, PNP | | | |
| Q003 | 2SA1005(K) | TR. SI, PNP | | | |
| Q004 | 2SC2786(K) | TR. SI, NPN | | | |
| Q005 | 2SC2786(K) | TR. SI, NPN | | | |
| Q006 | 2SC2786(K) | TR. SI, NPN | | | |
| Q007 | 2SC2786(K) | TR. SI, NPN | | | |
| Q008 | 2SA1005(K) | TR. SI, PNP | | | |
| Q009 | 2SC2786(K) | TR. SI, NPN | | | |
| Q010 | 2SC2786(K) | TR. SI, NPN | | | |
| Q011 | 2SC2786(K) | TR. SI, NPN | | | |
| Q012 | 2SC2786(K) | TR. SI, NPN | | | |
| Q013 | 2SC2786(K) | TR. SI, NPN | | | |
| Q014 | 2SC2786(K) | TR. SI, NPN | | | |
| Q015 | 2SC2407 | TR. SI, NPN | | | |
| Q016 | 2SC2407 | TR. SI, NPN | | | |
| Q017 | 2SC2912(R,S) | TR. SI, NPN | | | |
| Q018 | 2SC2912(R,S) | TR. SI, NPN | | | |
| Q301 | 2SA1009(L,K) | TR. SI, PNP | | | |
| Q302 | 2SA1009(L,K) | TR. SI, PNP | | | |
| Q303 | 2SA1175(F) | TR. SI, PNP | | | |
| Q304 | 2SA1175(F) | TR. SI, PNP | | | |
| Q305 | 2SC2271(E) | TR. SI, NPN | | | |
| Q306 | 2SC2271(E) | TR. SI, NPN | | | |
| R001 | RD14BB2E105J | RES. CARBON | 1M | 5% | 1/4W |
| R002 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R003 | RD14BB2E562J | RES. CARBON | 5.6K | 5% | 1/4W |
| R004 | RD14BB2E562J | RES. CARBON | 5.6K | 5% | 1/4W |
| R005 | RD14BB2E120J | RES. CARBON | 12 | 5% | 1/4W |
| R006 | RD14BB2E510J | RES. CARBON | 51 | 5% | 1/4W |
| R007 | RD14BB2E510J | RES. CARBON | 51 | 5% | 1/4W |
| R008 | RD14BB2E392J | RES. CARBON | 3.9K | 5% | 1/4W |
| R009 | RD14BB2E102J | RES. CARBON | 1K | 5% | 1/4W |
| R010 | RD14BB2E302J | RES. CARBON | 3K | 5% | 1/4W |
| R011 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R012 | RD14BB2E243J | RES. CARBON | 24K | 5% | 1/4W |
| R013 | RD14BB2E302J | RES. CARBON | 3K | 5% | 1/4W |
| R014 | RN14BK2E1000F | RES. METAL FILM | 100 | 1% | 1/4W |
| R015 | RN14BK2E1301F | RES. METAL FILM | 1.3K | 1% | 1/4W |
| R016 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R017 | RD14BB2E302J | RES. CARBON | 3K | 5% | 1/4W |
| R018 | RD14BB2E104J | RES. CARBON | 100K | 5% | 1/4W |
| R019 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R020 | RD14BB2E331J | RES. CARBON | 330 | 5% | 1/4W |
| R021 | RD14BB2E331J | RES. CARBON | 330 | 5% | 1/4W |
| R022 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R023 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R024 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R025 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R026 | RD14BB2E152J | RES. CARBON | 1.5K | 5% | 1/4W |
| R027 | RD14BB2E152J | RES. CARBON | 1.5K | 5% | 1/4W |
| R028 | RD14BB2E270J | RES. CARBON | 27 | 5% | 1/4W |
| R029 | RD14BB2E270J | RES. CARBON | 27 | 5% | 1/4W |
| R030 | RD14BB2E100J | RES. CARBON | 10 | 5% | 1/4W |
| R031 | RD14BB2E221J | RES. CARBON | 220 | 5% | 1/4W |
| R032 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R033 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R034 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R035 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R036 | RN14BK2E2201F | RES. METAL FILM | 2.2K | 1% | 1/4W |
| R037 | RN14BK2E2201F | RES. METAL FILM | 2.2K | 1% | 1/4W |
| R038 | RD14BB2E750J | RES. CARBON | 75 | 5% | 1/4W |
| R039 | RD14BB2E471J | RES. CARBON | 470 | 5% | 1/4W |
| R040 | RD14BB2E682J | RES. CARBON | 6.8K | 5% | 1/4W |
| R041 | RD14BB2E332J | RES. CARBON | 3.3K | 5% | 1/4W |
| R042 | RD14BB2E471J | RES. CARBON | 470 | 5% | 1/4W |
| R043 | RD14BB2E471J | RES. CARBON | 470 | 5% | 1/4W |
| R044 | RN14BK2E8200F | RES. METAL FILM | 820 | 1% | 1/4W |
| R045 | RN14BK2E8200F | RES. METAL FILM | 820 | 1% | 1/4W |
| R046 | RD14BB2E162J | RES. CARBON | 1.6K | 5% | 1/4W |
| R047 | NO USE | | | | |
| R048 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R049 | RD14BB2E302J | RES. CARBON | 3K | 5% | 1/4W |
| R050 | RD14BB2E302J | RES. CARBON | 3K | 5% | 1/4W |
| R051 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R052 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R053 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R054 | RD14BB2E201J | RES. CARBON | 200 | 5% | 1/4W |
| R055 | RD14BB2E201J | RES. CARBON | 200 | 5% | 1/4W |
| R056 | RD14BB2E121J | RES. CARBON | 120 | 5% | 1/4W |
| R057 | NO USE | | | | |
| R058 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R059 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R060 | RS14GB3F681J | RES. METAL FILM | 680 | 5% | 3W |
| R061 | RS14GB3F681J | RES. METAL FILM | 680 | 5% | 3W |
| R062 | RS14GB3F681J | RES. METAL FILM | 680 | 5% | 3W |
| R063 | RS14GB3F681J | RES. METAL FILM | 680 | 5% | 3W |
| R064 | RD14BB2E104J | RES. CARBON | 100K | 5% | 1/4W |
| R065 | RD14BB2E201J | RES. CARBON | 200 | 5% | 1/4W |
| R066 | RD14BB2E511J | RES. CARBON | 510 | 5% | 1/4W |
| R067 | RD14BB2E562J | RES. CARBON | 5.6K | 5% | 1/4W |
| R068 | RD14BB2E104J | RES. CARBON | 100K | 5% | 1/4W |
| R069 | RD14BB2E223J | RES. CARBON | 22K | 5% | 1/4W |
| R301 | RD14BB2E473J | RES. CARBON | 47K | 5% | 1/4W |

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| R302 | RD14BB2E102J | RES. CARBON | 1K | 5% | 1/4W |
| R303 | RD14BB2E3R3J | RES. CARBON | 3.3 | 5% | 1/4W |
| R304 | RD14BB2E100J | RES. CARBON | 10 | 5% | 1/4W |
| R305 | RD14BB2E562J | RES. CARBON | 5.6K | 5% | 1/4W |
| R306 | RD14BB2E822J | RES. CARBON | 8.2K | 5% | 1/4W |
| R307 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R308 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R309 | RN14BK2E1502F | RES. METAL FILM | 15K | 1% | 1/4W |
| R310 | RN14BK2E1003F | RES. METAL FILM | 100K | 1% | 1/4W |
| R311 | RN14BK2E1602F | RES. METAL FILM | 16K | 1% | 1/4W |
| R312 | RN14BK2E1503F | RES. METAL FILM | 150K | 1% | 1/4W |
| R313 | RD14BY2H104J | RES. CARBON | 100K | 5% | 1/2W |
| R314 | RD14BY2H104J | RES. CARBON | 100K | 5% | 1/2W |
| TC001 | C05-0425-05 | CAP. TRIMMER | 70P | | |
| TC002 | C05-0425-05 | CAP. TRIMMER | 70P | | |
| TC101 | C05-0434-05 | CAP. TRIMMER | 20P | | |
| TP001 | E23-0046-04 | TERMINAL | | | |
| TP002 | E23-0046-04 | TERMINAL | | | |
| TP003 | E23-0046-04 | TERMINAL | | | |
| TP004 | E23-0046-04 | TERMINAL | | | |
| TP005 | E23-0046-04 | TERMINAL | | | |
| U001 | M47F(B) | FET | | | |
| U301 | #PC7805H | IC | | | |
| U302 | #PC7915HA | IC | | | |
| U303 | NJM7815 | IC | | | |
| U304 | NJM4558D | IC | DUAL OP AMP. | | |
| VR001 | R05-3506-05 | V.R. | 10K B | | |
| VR002 | NO USE | | | | |
| VR003 | R12-0539-05 | RES. SEMI FIXED | 200 B | | |
| VR004 | R12-0421-05 | RES. SEMI FIXED | 100 B | | |
| VR005 | R12-0421-05 | RES. SEMI FIXED | 100 B | | |
| VR006 | R12-0421-05 | RES. SEMI FIXED | 100 B | | |

## VERTICAL AMP & POWER UNIT

### (X73-1490-02)

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| | E23-0526-04 | EARTH PLATE | | | |
| | E33-4031-00 | WIRE ASSY | | | |
| | F01-0835-05 | HEAT SINK | | | |
| | F01-0836-04 | HEAT SINK | | | |
| | J25-2999-13 | PCB (UNMOUNTED) | | | |
| | J61-0517-05 | STADOFF CLIP | | | |
| | N19-0191-05 | WASHER NONMETAL | | | |
| | N19-0702-04 | WASHER | | | |
| | N30-3008-46 | SCREW, PAN HD | M 3X8 | | |
| | R92-0150-05 | JUMPING RES. | ZERO OHM | | |
| | 212-1018-05 | TUBE (PLASTIC) | | | |
| | 212-2014-05 | TUBE (PLASTIC) | | | |
| C006 | CC45CH1H471J | CAP. CERAMIC | 470P | 5% | 50V |
| C007 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |
| C008 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C009 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C010 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C011 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C012 | NO USE | | | | |
| C013 | CC45CH1H470J | CAP. CERAMIC | 47P | 5% | 50V |
| C014 | CE04W1E220M | CAP. ELECTRO | 22 | 20% | 25V |
| C015 | NO USE | | | | |
| C016 | CE04W1E220M | CAP. ELECTRO | 22 | 20% | 25V |
| C017 | CE04BW1E220M | CAP. ELECTRO | 22 | 20% | 25V |
| C021 | CC45CH1H050C | CAP. CERAMIC | 5P | 0.25P | 50V |
| C103 | CC45CH1H150J | CAP. CERAMIC | 15P | 5% | 50V |
| C104 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C105 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C106 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C107 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C108 | NO USE | | | | |
| C109 | CC45CH1H470J | CAP. CERAMIC | 47P | 5% | 50V |
| C110 | CC45CH1H470J | CAP. CERAMIC | 47P | 5% | 50V |
| C111 | CE04BW1H010M | CAP. ELECTRO | 1 | 20% | 50V |
| C112 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |
| C116 | CC45CH1H050C | CAP. CERAMIC | 5P | 0.25P | 50V |
| C301 | CE04W1V222M | CAP. ELECTRO | 2200 | 20% | 35V |
| C302 | CE04W1V222M | CAP. ELECTRO | 2200 | 20% | 35V |
| C303 | CE04W1E222M | CAP. ELECTRO | 2200 | 20% | 25V |
| C304 | C90-0910-05 | CAP. ELECTRO | 100 | 20% | 200V |
| C305 | CE04W2E470 | CAP. ELECTRO | 47 | | 250V |
| C306 | CE04W1A101M | CAP. ELECTRO | 100 | 20% | 10V |
| C307 | CE04W1E101M | CAP. ELECTRO | 100 | 20% | 25V |
| C308 | CE04W1E101M | CAP. ELECTRO | 100 | 20% | 25V |
| C309 | CE04W2C100 | CAP. ELECTRO | 10 | | 160V |
| C310 | CE04W2E010 | CAP. ELECTRO | 1 | | 250V |

# PARTS LIST

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| C311 | CE04BW1H010M | CAP. ELECTRO | 1 | 20% | 50V |
| C312 | CE04W1H010M | CAP. ELECTRO | 1 | 20% | 50V |
| C313 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |
| C314 | CE04W1H010M | CAP. ELECTRO | 1 | 20% | 50V |
| C315 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |
| C316 | CE04W1H010M | CAP. ELECTRO | 1 | 20% | 50V |
| C317 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |
| C318 | CK45B1H102K | CAP. CERAMIC | 1000P | 10% | 50V |
| C319 | CK45B1H102K | CAP. CERAMIC | 1000P | 10% | 50V |
| C320 | CK45B2H103K | CAP. CERAMIC | 0.01 | 10% | 500V |
| D001 | DS442X | DIODE | | | |
| D002 | DS442X | DIODE | | | |
| D003 | DS442X | DIODE | | | |
| D101 | DS442X | DIODE | | | |
| D102 | DS442X | DIODE | | | |
| D103 | DS442X | DIODE | | | |
| D104 | DS442X | DIODE | | | |
| D105 | DS442X | DIODE | | | |
| D106 | DS442X | DIODE | | | |
| D107 | DS442X | DIODE | | | |
| D108 | MTZ10JC | DIODE, ZENER | 10V | | |
| D301 | S2VB40F | DIODE, BRIDGE | | | |
| D302 | S2VB40F | DIODE, BRIDGE | | | |
| D303 | S1VB60 | DIODE | | | |
| D304 | S1VB60 | DIODE | | | |
| D305 | DS442X | DIODE | | | |
| D306 | DS442X | DIODE | | | |
| D307 | V06B | DIODE | | | |
| L001 | L40-1025-03 | FERRI INDUCTOR | | | |
| L002 | L40-1025-03 | FERRI INDUCTOR | | | |
| P001 | E40-0473-05 | PIN CONNECTOR | 4 P | | |
| P002 | E40-0273-05 | PIN CONNECTOR | 2 P | | |
| P003 | E04-0154-05 | BNC RECEPTACLE | | | |
| P004 | E23-0046-04 | TERMINAL | | | |
| P005 | E23-0046-04 | TERMINAL | | | |
| P101 | E40-0473-05 | PIN CONNECTOR | 4 P | | |
| P301 | E40-0930-05 | PIN CONNECTOR | 9P | | |
| P302 | E40-1116-05 | PIN CONNECTOR | 11P | | |
| P303 | E40-1116-05 | PIN CONNECTOR | 11P | | |
| Q002 | 2SA1005(K) | TR. SI, PNP | | | |
| Q003 | 2SA1005(K) | TR. SI, PNP | | | |
| Q004 | 2SC2786(K) | TR. SI, NPN | | | |
| Q005 | 2SC2785(F) | TR. SI, NPN | | | |
| Q006 | 2SC2785(F) | TR. SI, NPN | | | |
| Q007 | 2SC2785(F) | TR. SI, NPN | | | |
| Q008 | 2SA1005(K) | TR. SI, PNP | | | |
| Q009 | 2SC2785(F) | TR. SI, NPN | | | |
| Q010 | 2SC2785(F) | TR. SI, NPN | | | |
| Q011 | 2SC2785(F) | TR. SI, NPN | | | |
| Q012 | 2SC2785(F) | TR. SI, NPN | | | |
| Q013 | 2SC2785(F) | TR. SI, NPN | | | |
| Q014 | 2SC2785(F) | TR. SI, NPN | | | |
| Q015 | 2SC1973 | TR. SI, NPN | | | |
| Q016 | 2SC1973 | TR. SI, NPN | | | |
| Q017 | 2SC2912(R,S) | TR. SI, NPN | | | |
| Q018 | 2SC2912(R,S) | TR. SI, NPN | | | |
| Q102 | 2SA1005(K) | TR. SI, PNP | | | |
| Q103 | 2SA1005(K) | TR. SI, PNP | | | |
| Q104 | 2SC2786(K) | TR. SI, NPN | | | |
| Q105 | 2SC2785(F) | TR. SI, NPN | | | |
| Q106 | 2SC2785(F) | TR. SI, NPN | | | |
| Q107 | 2SC2785(F) | TR. SI, NPN | | | |
| Q108 | 2SC2785(F) | TR. SI, NPN | | | |
| Q109 | 2SC2785(F) | TR. SI, NPN | | | |
| Q110 | 2SC2785(F) | TR. SI, NPN | | | |
| Q111 | 2SC2785(F) | TR. SI, NPN | | | |
| Q112 | 2SC2785(F) | TR. SI, NPN | | | |
| Q113 | 2SA1175(F) | TR. SI, PNP | | | |
| Q114 | 2SC2785(F) | TR. SI, NPN | | | |
| Q115 | 2SC2785(F) | TR. SI, NPN | | | |
| Q301 | 2SA1009(L,K) | TR. SI, PNP | | | |
| Q302 | 2SA1009(L,K) | TR. SI, PNP | | | |
| Q303 | 2SA1175(F) | TR. SI, PNP | | | |
| Q304 | 2SA1175(F) | TR. SI, PNP | | | |
| Q305 | 2SC2271(E) | TR. SI, NPN | | | |
| Q306 | 2SC2271(E) | TR. SI, NPN | | | |
| R001 | RD14BB2E105J | RES. CARBON | 1M | 5% | 1/4W |
| R002 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R003 | RD14BB2E562J | RES. CARBON | 5.6K | 5% | 1/4W |
| R004 | RD14BB2E562J | RES. CARBON | 5.6K | 5% | 1/4W |
| R005 | RD14BB2E120J | RES. CARBON | 12 | 5% | 1/4W |
| R006 | RD14BB2E510J | RES. CARBON | 51 | 5% | 1/4W |
| R007 | RD14BB2E510J | RES. CARBON | 51 | 5% | 1/4W |
| R008 | RD14BB2E392J | RES. CARBON | 3.9K | 5% | 1/4W |
| R009 | RD14BB2E102J | RES. CARBON | 1K | 5% | 1/4W |

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| R010 | RD14BB2E302J | RES. CARBON | 3K | 5% | 1/4W |
| R011 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R012 | RD14BB2E223J | RES. CARBON | 22K | 5% | 1/4W |
| R013 | RD14BB2E302J | RES. CARBON | 3K | 5% | 1/4W |
| R014 | RN14BK2E1000F | RES. METAL FILM | 100 | 1% | 1/4W |
| R015 | RN14BK2E1201F | RES. METAL FILM | 1.2K | 1% | 1/4W |
| R016 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R017 | RD14BB2E302J | RES. CARBON | 3K | 5% | 1/4W |
| R018 | RD14BB2E104J | RES. CARBON | 100K | 5% | 1/4W |
| R019 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R020 | RD14BB2E331J | RES. CARBON | 330 | 5% | 1/4W |
| R021 | RD14BB2E331J | RES. CARBON | 330 | 5% | 1/4W |
| R022 | NO USE | | | | |
| R023 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R024 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R025 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R026 | RD14BB2E152J | RES. CARBON | 1.5K | 5% | 1/4W |
| R027 | RD14BB2E152J | RES. CARBON | 1.5K | 5% | 1/4W |
| R028 | RD14BB2E270J | RES. CARBON | 27 | 5% | 1/4W |
| R029 | RD14BB2E270J | RES. CARBON | 27 | 5% | 1/4W |
| R030 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R031 | RD14BB2E470J | RES. CARBON | 47 | 5% | 1/4W |
| R032 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R033 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R034 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R035 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R036 | RN14BK2E2201F | RES. METAL FILM | 2.2K | 1% | 1/4W |
| R037 | RN14BK2E2201F | RES. METAL FILM | 2.2K | 1% | 1/4W |
| R038 | RD14BB2E750J | RES. CARBON | 75 | 5% | 1/4W |
| R039 | RD14BB2E431J | RES. CARBON | 430 | 5% | 1/4W |
| R040 | RD14BB2E682J | RES. CARBON | 6.8K | 5% | 1/4W |
| R041 | RD14BB2E332J | RES. CARBON | 3.3K | 5% | 1/4W |
| R042 | RD14BB2E471J | RES. CARBON | 470 | 5% | 1/4W |
| R043 | RD14BB2E471J | RES. CARBON | 470 | 5% | 1/4W |
| R044 | RN14BK2E8200F | RES. METAL FILM | 820 | 1% | 1/4W |
| R045 | RN14BK2E8200F | RES. METAL FILM | 820 | 1% | 1/4W |
| R046 | RN14BK2E8200F | RES. METAL FILM | 820 | 1% | 1/4W |
| R047 | RN14BK2E8200F | RES. METAL FILM | 820 | 1% | 1/4W |
| R048 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R049 | RD14BB2E302J | RES. CARBON | 3K | 5% | 1/4W |
| R050 | RD14BB2E302J | RES. CARBON | 3K | 5% | 1/4W |
| R051 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R052 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R053 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R054 | RD14BB2E221J | RES. CARBON | 220 | 5% | 1/4W |
| R055 | RD14BB2E221J | RES. CARBON | 220 | 5% | 1/4W |
| R056 | RD14BB2E750J | RES. CARBON | 75 | 5% | 1/4W |
| R057 | RD14BB2E121J | RES. CARBON | 120 | 5% | 1/4W |
| R058 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R059 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R060 | RS14GB3F681J | RES. METAL FILM | 680 | 5% | 3W |
| R061 | RS14GB3F681J | RES. METAL FILM | 680 | 5% | 3W |
| R062 | RS14GB3F681J | RES. METAL FILM | 680 | 5% | 3W |
| R063 | RS14GB3F681J | RES. METAL FILM | 680 | 5% | 3W |
| R064 | RD14BB2E104J | RES. CARBON | 100K | 5% | 1/4W |
| R065 | RD14BB2E201J | RES. CARBON | 200 | 5% | 1/4W |
| R066 | RD14BB2E471J | RES. CARBON | 470 | 5% | 1/4W |
| R067 | RD14BB2E272J | RES. CARBON | 2.7K | 5% | 1/4W |
| R068 | RD14BB2E104J | RES. CARBON | 100K | 5% | 1/4W |
| R101 | RD14BB2E105J | RES. CARBON | 1M | 5% | 1/4W |
| R102 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R103 | RD14BB2E562J | RES. CARBON | 5.6K | 5% | 1/4W |
| R104 | RD14BB2E562J | RES. CARBON | 5.6K | 5% | 1/4W |
| R105 | RD14BB2E120J | RES. CARBON | 12 | 5% | 1/4W |
| R106 | RD14BB2E510J | RES. CARBON | 51 | 5% | 1/4W |
| R107 | RD14BB2E510J | RES. CARBON | 51 | 5% | 1/4W |
| R108 | RD14BB2E392J | RES. CARBON | 3.9K | 5% | 1/4W |
| R109 | RD14BB2E102J | RES. CARBON | 1K | 5% | 1/4W |
| R110 | RD14BB2E302J | RES. CARBON | 3K | 5% | 1/4W |
| R111 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R112 | RD14BB2E223J | RES. CARBON | 22K | 5% | 1/4W |
| R113 | RD14BB2E302J | RES. CARBON | 3K | 5% | 1/4W |
| R114 | RN14BK2E1000F | RES. METAL FILM | 100 | 1% | 1/4W |
| R115 | RD14BB2E104J | RES. CARBON | 100K | 5% | 1/4W |
| R116 | RN14BK2E1201F | RES. METAL FILM | 1.2K | 1% | 1/4W |
| R117 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R118 | RD14BB2E182J | RES. CARBON | 1.8K | 5% | 1/4W |
| R119 | NO USE | | | | |
| R120 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R121 | RD14BB2E561J | RES. CARBON | 560 | 5% | 1/4W |
| R122 | NO USE | | | | |
| R123 | RD14BB2E333J | RES. CARBON | 33K | 5% | 1/4W |
| R124 | RD14BB2E470J | RES. CARBON | 47 | 5% | 1/4W |
| R125 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R126 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R127 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R128 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R129 | RN14BK2E2201F | RES. METAL FILM | 2.2K | 1% | 1/4W |
| R130 | RN14BK2E2201F | RES. METAL FILM | 2.2K | 1% | 1/4W |
| R131 | RD14BB2E750J | RES. CARBON | 75 | 5% | 1/4W |
| R132 | RN14BK2E2001F | RES. METAL FILM | 2K | 1% | 1/4W |
| R133 | RN14BK2E2001F | RES. METAL FILM | 2K | 1% | 1/4W |
| R134 | RD14BB2E510J | RES. CARBON | 51 | 5% | 1/4W |
| R135 | RD14BB2E511J | RES. CARBON | 510 | 5% | 1/4W |
| R136 | RD14BB2E123J | RES. CARBON | 12K | 5% | 1/4W |
| R137 | RD14BB2E472J | RES. CARBON | 4.7K | 5% | 1/4W |

# PARTS LIST

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| R138 | RD14BB2E332J | RES. CARBON | 3.3K | 5% | 1/4W |
| R139 | RD14BB2E332J | RES. CARBON | 3.3K | 5% | 1/4W |
| R140 | RD14BB2E471J | RES. CARBON | 470 | 5% | 1/4W |
| R141 | RD14BB2E471J | RES. CARBON | 470 | 5% | 1/4W |
| R142 | RD14BB2E471J | RES. CARBON | 470 | 5% | 1/4W |
| R143 | RD14BB2E471J | RES. CARBON | 470 | 5% | 1/4W |
| R144 | RD14BB2E272J | RES. CARBON | 2.7K | 5% | 1/4W |
| R145 | RD14BB2E153J | RES. CARBON | 15K | 5% | 1/4W |
| R146 | RD14BB2E153J | RES. CARBON | 15K | 5% | 1/4W |
| R147 | RD14BB2E272J | RES. CARBON | 2.7K | 5% | 1/4W |
| R148 | RD14BB2E223J | RES. CARBON | 22K | 5% | 1/4W |
| R149 | RD14BB2E682J | RES. CARBON | 6.8K | 5% | 1/4W |
| R150 | RD14BB2E102J | RES. CARBON | 1K | 5% | 1/4W |
| R151 | RD14BB2E102J | RES. CARBON | 1K | 5% | 1/4W |
| R152 | RD14BB2E151J | RES. CARBON | 150 | 5% | 1/4W |
| R153 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R154 | NO USE | | | | |
| R155 | RD14BB2E470J | RES. CARBON | 47 | 5% | 1/4W |
| R156 | NO USE | | | | |
| R157 | RD14BB2E332J | RES. CARBON | 3.3K | 5% | 1/4W |
| R158 | RD14BB2E104J | RES. CARBON | 100K | 5% | 1/4W |
| R159 | RD14BB2E223J | RES. CARBON | 22K | 5% | 1/4W |
| R301 | RD14BB2E473J | RES. CARBON | 47K | 5% | 1/4W |
| R302 | RD14BB2E102J | RES. CARBON | 1K | 5% | 1/4W |
| R303 | RD14BB2E3R3J | RES. CARBON | 3.3 | 5% | 1/4W |
| R304 | RD14BB2E100J | RES. CARBON | 10 | 5% | 1/4W |
| R305 | RD14BB2E562J | RES. CARBON | 5.6K | 5% | 1/4W |
| R306 | RD14BB2E822J | RES. CARBON | 8.2K | 5% | 1/4W |
| R307 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R308 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R309 | RN14BK2E1502F | RES. METAL FILM | 15K | 1% | 1/4W |
| R310 | RN14BK2E1003F | RES. METAL FILM | 100K | 1% | 1/4W |
| R311 | RN14BK2E1602F | RES. METAL FILM | 16K | 1% | 1/4W |
| R312 | RN14BK2E1503F | RES. METAL FILM | 150K | 1% | 1/4W |
| R313 | RD14BY2H104J | RES. CARBON | 100K | 5% | 1/2W |
| R314 | RD14BY2H104J | RES. CARBON | 100K | 5% | 1/2W |
| S101 | S42-4509-05 | PUSH SWITCH | | | |
| TC001 | C05-0425-05 | CAP. TRIMMER | 70P | | |
| TC002 | C05-0425-05 | CAP. TRIMMER | 70P | | |
| TC101 | C05-0434-05 | CAP. TRIMMER | 20P | | |
| TC102 | C05-0434-05 | CAP. TRIMMER | 20P | | |
| TP001 | E23-0046-04 | TERMINAL | | | |
| TP002 | E23-0046-04 | TERMINAL | | | |
| TP003 | E23-0046-04 | TERMINAL | | | |
| TP004 | E23-0046-04 | TERMINAL | | | |
| TP101 | E23-0046-04 | TERMINAL | | | |
| TP102 | E23-0046-04 | TERMINAL | | | |
| TP103 | E23-0046-04 | TERMINAL | | | |
| TP104 | E23-0046-04 | TERMINAL | | | |
| U001 | M47F(B) | FET | | | |
| U101 | M47F(B) | FET | | | |
| U301 | UPC7805H | IC | | | |
| U302 | UPC7915HA | IC | | | |
| U303 | NJM7815 | IC | | | |
| U304 | NJM4558D | IC | | | |
| VR001 | R05-3506-05 | V.R. | 20K B | | |
| VR002 | NO USE | | | | |
| VR003 | R12-0539-05 | RES. SEMI FIXED | 200 B | | |
| VR004 | R12-0421-05 | RES. SEMI FIXED | 100 B | | |
| VR005 | R12-0421-05 | RES. SEMI FIXED | 100 B | | |
| VR006 | R12-0421-05 | RES. SEMI FIXED | 100 B | | |
| VR101 | R05-3506-05 | V.R. | 20K B | | |
| VR102 | R12-3523-05 | RES. SEMI FIXED | 20K B | | |
| VR103 | R12-0541-05 | RES. SEMI FIXED | 100 B | | |
| VR104 | R12-0543-05 | RES. SEMI FIXED | 500 B | | |

## VERTICAL AMP & POWER UNIT

## (X73-1490-03)

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| | E23-0526-04 | EARTH PLATE | | | |
| | E33-4032-00 | WIRE ASSY | | | |
| | F01-0835-05 | HEAT SINK | | | |
| | F01-0836-04 | HEAT SINK | | | |
| | J25-2999-13 | PCB (UNMOUNTED) | | | |
| | J61-0517-05 | STADOFF CLIP | | | |
| | N19-0191-05 | WASHER NONMETAL | | | |
| | N19-0702-04 | WASHER | | | |
| | N30-3008-46 | SCREW, PAN HD | M 3X8 | | |
| | R92-0150-05 | JUMPING RES. | ZERO OHM | | |
| | 212-2014-05 | TUBE (PLASTIC) | | | |
| C006 | CC45CH1H471J | CAP. CERAMIC | 470P | 5% | 50V |

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| C007 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |
| C008 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C009 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C010 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C011 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C012 | NO USE | | | | |
| C013 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |
| C014 | CE04W1E220M | CAP. ELECTRO | 22 | 20% | 25V |
| C015 | NO USE | | | | |
| C016 | CE04W1E220M | CAP. ELECTRO | 22 | 20% | 25V |
| C017 | CE04BW1E220M | CAP. ELECTRO | 22 | 20% | 25V |
| C021 | CC45CH1H050C | CAP. CERAMIC | 5P | 0.25P | 50V |
| C301 | CE04W1V222M | CAP. ELECTRO | 2200 | 20% | 35V |
| C302 | CE04W1V222M | CAP. ELECTRO | 2200 | 20% | 35V |
| C303 | CE04W1E222M | CAP. ELECTRO | 2200 | 20% | 25V |
| C304 | C90-0910-05 | CAP. ELECTRO | 100 | 20% | 200V |
| C305 | CE04W2E470 | CAP. ELECTRO | 47 | | 250V |
| C306 | CE04W1A101M | CAP. ELECTRO | 100 | 20% | 10V |
| C307 | CE04W1E101M | CAP. ELECTRO | 100 | 20% | 25V |
| C308 | CE04W1E101M | CAP. ELECTRO | 100 | 20% | 25V |
| C309 | CE04W2C100 | CAP. ELECTRO | 10 | | 160V |
| C310 | CE04W2E010 | CAP. ELECTRO | 1 | | 250V |
| C311 | CE04BW1H010M | CAP. ELECTRO | 1 | 20% | 50V |
| C312 | CE04W1H010M | CAP. ELECTRO | 1 | 20% | 50V |
| C313 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |
| C314 | CE04W1H010M | CAP. ELECTRO | 1 | 20% | 50V |
| C315 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |
| C316 | CE04W1H010M | CAP. ELECTRO | 1 | 20% | 50V |
| C317 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |
| C318 | CK45B1H102K | CAP. CERAMIC | 1000P | 10% | 50V |
| C319 | CK45B1H102K | CAP. CERAMIC | 1000P | 10% | 50V |
| C320 | CK45B2H103K | CAP. CERAMIC | 0.01 | 10% | 500V |
| D001 | DS442X | DIODE | | | |
| D002 | DS442X | DIODE | | | |
| D003 | DS442X | DIODE | | | |
| D301 | S2VB40F | DIODE BRIDGE | | | |
| D302 | S2VB40F | DIODE BRIDGE | | | |
| D303 | S1VB60 | DIODE | | | |
| D304 | S1VB60 | DIODE | | | |
| D305 | DS442X | DIODE | | | |
| D306 | DS442X | DIODE | | | |
| D307 | V06B | DIODE | | | |
| L001 | L40-1025-03 | FERRI INDUCTOR | | | |
| L002 | L40-1025-03 | FERRI INDUCTOR | | | |
| P001 | E40-0473-05 | PIN CONNECTOR | 4 P | | |
| P002 | E40-0273-05 | PIN CONNECTOR | 2 P | | |
| P003 | E04-0154-05 | BNC RECEPTACLE | | | |
| P301 | E40-0930-05 | PIN CONNECTOR | 9P | | |
| P302 | E40-1116-05 | PIN CONNECTOR | 11P | | |
| P303 | E40-1116-05 | PIN CONNECTOR | 11P | | |
| Q002 | 2SA1005(K) | TR. SI, PNP | | | |
| Q003 | 2SA1005(K) | TR. SI, PNP | | | |
| Q004 | 2SC2786(K) | TR. SI, NPN | | | |
| Q005 | 2SC2785(F) | TR. SI, NPN | | | |
| Q006 | 2SC2785(F) | TR. SI, NPN | | | |
| Q007 | 2SC2785(F) | TR. SI, NPN | | | |
| Q008 | 2SA1005(K) | TR. SI, PNP | | | |
| Q009 | 2SC2785(F) | TR. SI, NPN | | | |
| Q010 | 2SC2785(F) | TR. SI, NPN | | | |
| Q011 | 2SC2785(F) | TR. SI, NPN | | | |
| Q012 | 2SC2785(F) | TR. SI, NPN | | | |
| Q013 | 2SC2785(F) | TR. SI, NPN | | | |
| Q014 | 2SC2785(F) | TR. SI, NPN | | | |
| Q015 | 2SC1973 | TR. SI, NPN | | | |
| Q016 | 2SC1973 | TR. SI, NPN | | | |
| Q017 | 2SC2912(R,S) | TR. SI, NPN | | | |
| Q018 | 2SC2912(R,S) | TR. SI, NPN | | | |
| Q301 | 2SA1009(L,K) | TR. SI, PNP | | | |
| Q302 | 2SA1009(L,K) | TR. SI, PNP | | | |
| Q303 | 2SA1175(F) | TR. SI, PNP | | | |
| Q304 | 2SA1175(F) | TR. SI, PNP | | | |
| Q305 | 2SC2271(E) | TR. SI, NPN | | | |
| Q306 | 2SC2271(E) | TR. SI, NPN | | | |
| R001 | RD14BB2E105J | RES. CARBON | 1M | 5% | 1/4W |
| R002 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R003 | RD14BB2E562J | RES. CARBON | 5.6K | 5% | 1/4W |
| R004 | RD14BB2E562J | RES. CARBON | 5.6K | 5% | 1/4W |
| R005 | RD14BB2E120J | RES. CARBON | 12 | 5% | 1/4W |
| R006 | RD14BB2E510J | RES. CARBON | 51 | 5% | 1/4W |
| R007 | RD14BB2E510J | RES. CARBON | 51 | 5% | 1/4W |
| R008 | RD14BB2E392J | RES. CARBON | 3.9K | 5% | 1/4W |
| R009 | RD14BB2E102J | RES. CARBON | 1K | 5% | 1/4W |
| R010 | RD14BB2E302J | RES. CARBON | 3K | 5% | 1/4W |
| R011 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R012 | RD14BB2E223J | RES. CARBON | 22K | 5% | 1/4W |
| R013 | RD14BB2E302J | RES. CARBON | 3K | 5% | 1/4W |
| R014 | RN14BK2E1000F | RES. METAL FILM | 100 | 1% | 1/4W |

# PARTS LIST

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| R015 | RN14BK2E1201F | RES. METAL FILM | 1.2K | 1% | 1/4W |
| R016 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R017 | RD14BB2E302J | RES. CARBON | 3K | 5% | 1/4W |
| R018 | RD14BB2E104J | RES. CARBON | 100K | 5% | 1/4W |
| R019 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R020 | RD14BB2E331J | RES. CARBON | 330 | 5% | 1/4W |
| R021 | RD14BB2E331J | RES. CARBON | 330 | 5% | 1/4W |
| R022 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R023 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R024 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R025 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R026 | RD14BB2E152J | RES. CARBON | 1.5K | 5% | 1/4W |
| R027 | RD14BB2E152J | RES. CARBON | 1.5K | 5% | 1/4W |
| R028 | RD14BB2E270J | RES. CARBON | 27 | 5% | 1/4W |
| R029 | RD14BB2E270J | RES. CARBON | 27 | 5% | 1/4W |
| R030 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R031 | RD14BB2E470J | RES. CARBON | 47 | 5% | 1/4W |
| R032 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R033 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R034 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R035 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R036 | RN14BK2E2201F | RES. METAL FILM | 2.2K | 1% | 1/4W |
| R037 | RN14BK2E2201F | RES. METAL FILM | 2.2K | 1% | 1/4W |
| R038 | RD14BB2E750J | RES. CARBON | 75 | 5% | 1/4W |
| R039 | RD14BB2E471J | RES. CARBON | 470 | 5% | 1/4W |
| R040 | RD14BB2E682J | RES. CARBON | 6.8K | 5% | 1/4W |
| R041 | RD14BB2E332J | RES. CARBON | 3.3K | 5% | 1/4W |
| R042 | RD14BB2E471J | RES. CARBON | 470 | 5% | 1/4W |
| R043 | RD14BB2E471J | RES. CARBON | 470 | 5% | 1/4W |
| R044 | RN14BK2E8200F | RES. METAL FILM | 820 | 1% | 1/4W |
| R045 | RN14BK2E8200F | RES. METAL FILM | 820 | 1% | 1/4W |
| R046 | RD14BB2E162J | RES. CARBON | 1.6K | 5% | 1/4W |
| R047 | NO USE | | | | |
| R048 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R049 | RD14BB2E302J | RES. CARBON | 3K | 5% | 1/4W |
| R050 | RD14BB2E302J | RES. CARBON | 3K | 5% | 1/4W |
| R051 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R052 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R053 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R054 | RD14BB2E221J | RES. CARBON | 220 | 5% | 1/4W |
| R055 | RD14BB2E221J | RES. CARBON | 220 | 5% | 1/4W |
| R056 | RD14BB2E750J | RES. CARBON | 75 | 5% | 1/4W |
| R057 | RD14BB2E121J | RES. CARBON | 120 | 5% | 1/4W |
| R058 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R059 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R060 | RS14GB3F681J | RES. METAL FILM | 680 | 5% | 3W |
| R061 | RS14GB3F681J | RES. METAL FILM | 680 | 5% | 3W |
| R062 | RS14GB3F681J | RES. METAL FILM | 680 | 5% | 3W |
| R063 | RS14GB3F681J | RES. METAL FILM | 680 | 5% | 3W |
| R064 | RD14BB2E104J | RES. CARBON | 100K | 5% | 1/4W |
| R065 | RD14BB2E201J | RES. CARBON | 200 | 5% | 1/4W |
| R066 | RD14BB2E112J | RES. CARBON | 1.1K | 5% | 1/4W |
| R067 | RD14BB2E272J | RES. CARBON | 2.7K | 5% | 1/4W |
| R068 | RD14BB2E104J | RES. CARBON | 100K | 5% | 1/4W |
| R301 | RD14BB2E473J | RES. CARBON | 47K | 5% | 1/4W |
| R302 | RD14BB2E102J | RES. CARBON | 1K | 5% | 1/4W |
| R303 | RD14BB2E3R3J | RES. CARBON | 3.3 | 5% | 1/4W |
| R304 | RD14BB2E100J | RES. CARBON | 10 | 5% | 1/4W |
| R305 | RD14BB2E562J | RES. CARBON | 5.6K | 5% | 1/4W |
| R306 | RD14BB2E822J | RES. CARBON | 8.2K | 5% | 1/4W |
| R307 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R308 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R309 | RN14BK2E1502F | RES. METAL FILM | 15K | 1% | 1/4W |
| R310 | RN14BK2E1003F | RES. METAL FILM | 100K | 1% | 1/4W |
| R311 | RN14BK2E1602F | RES. METAL FILM | 16K | 1% | 1/4W |
| R312 | RN14BK2E1503F | RES. METAL FILM | 150K | 1% | 1/4W |
| R313 | RD14BY2H104J | RES. CARBON | 100K | 5% | 1/2W |
| R314 | RD14BY2H104J | RES. CARBON | 100K | 5% | 1/2W |
| TC001 | C05-0425-05 | CAP. TRIMMER | 70P | | |
| TC002 | C05-0425-05 | CAP. TRIMMER | 70P | | |
| TC101 | C05-0434-05 | CAP. TRIMMER | 20P | | |
| TP001 | E23-0046-04 | TERMINAL | | | |
| TP002 | E23-0046-04 | TERMINAL | | | |
| TP003 | E23-0046-04 | TERMINAL | | | |
| TP004 | E23-0046-04 | TERMINAL | | | |
| TP005 | E23-0046-04 | TERMINAL | | | |
| U001 | M47F(B) | FET | | | |
| U301 | UPC7805H | IC | | | |
| U302 | UPC7915HA | IC | | | |
| U303 | NJM7815 | IC | | | |
| U304 | NJM4558D | IC | | | |
| VR001 | R05-3506-05 | V.R. | 20K B | | |
| VR002 | NO USE | | | | |
| VR003 | R12-0539-05 | RES. SEMI FIXED | 200 B | | |
| VR004 | R12-0421-05 | RES. SEMI FIXED | 100 B | | |
| VR005 | R12-0421-05 | RES. SEMI FIXED | 100 B | | |
| VR006 | R12-0421-05 | RES. SEMI FIXED | 100 B | | |

## HORIZONTAL & HIGH VOLTAGE UNIT

## (X74-1340-00)

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| | E23-0015-04 | EARTH LUG | | | |
| | E23-0046-04 | TERMINAL | | | |
| | E31-2170-05 | JUMPING WIRE | | | |
| | E33-4028-00 | WIRE ASSY | | | |
| | F01-0230-04 | HEAT SINK | | | |
| | F01-0820-04 | HEAT SINK | | | |
| | F01-0835-05 | HEAT SINK | | | |
| | F15-0727-04 | HOLDER (NEON TUBE) | | | |
| | F20-0622-05 | INSULATOR | | | |
| | J25-2998-13 | PCB (UNMOUNTED) | | | |
| | J31-0604-04 | COLLAR | | | |
| | N19-0191-05 | WASHER NONMETAL | | | |
| | N30-3008-46 | SCREW, PAN HD | M 3X8 | | |
| | R92-0150-05 | JUMPING RES. | ZERO OHM | | |
| | W02-0408-05 | HIGH VOLTAGE POWER BLOCK | | | |
| | 002-0001-05 | BRAIDED WIRE | | | |
| | 212-1018-05 | TUBE (PLASTIC) | | | |
| | 212-3013-05 | TUBE (PLASTIC) | | | |
| C001 | CC45CH1H330J | CAP. CERAMIC | 33P | 5% | 50V |
| C002 | CC45CH2H010C | CAP. CERAMIC | 1P | 0.25P | 500V |
| C003 | CK45B2H472K | CAP. CERAMIC | 4700P | 10% | 500V |
| C004 | CE04W1H100M | CAP. ELECTRO | 10 | 20% | 50V |
| C005 | CE04W2E100 | CAP. ELECTRO | 10 | | 250V |
| C006 | CQ93FM1H104K | CAP. MYLAR | 0.1 | 10% | 50V |
| C007 | CQ93FM1H153K | CAP. MYLAR | 0.015 | 10% | 50V |
| C008 | CE04W1V471M | CAP. ELECTRO | 470 | 20% | 35V |
| C009 | CQ93FM1H104K | CAP. MYLAR | 0.1 | 10% | 50V |
| C010 | CQ93FM1H223K | CAP. MYLAR | 0.022 | 10% | 50V |
| C011 | CK45B2H102K | CAP. CERAMIC | 1000P | 10% | 500V |
| C012 | CK45E3D103P | CAP. CERAMIC | 0.01 | | 2K |
| C013 | CK45E3D103P | CAP. CERAMIC | 0.01 | | 2K |
| C014 | NO USE | | | | |
| C015 | CE04W2E010 | CAP. ELECTRO | 1 | | 250V |
| C016 | CE04W2E4R7 | CAP. ELECTRO | 4.7 | | 250V |
| C017 | CK45B2H472K | CAP. CERAMIC | 4700P | 10% | 500V |
| C018 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C019 | CC45FCH1H100D | CAP. CERAMIC | 10P | 0.5P | 50V |
| C020 | CE04W1E101M | CAP. ELECTRO | 100 | 20% | 25V |
| C021 | CK45B2H103K | CAP. CERAMIC | 0.01 | 10% | 500V |
| C022 | CE04W1E101M | CAP. ELECTRO | 100 | 20% | 25V |
| C023 | CE04W1E101M | CAP. ELECTRO | 100 | 20% | 25V |
| C024 | C90-0912-05 | CAP. ELECTRO | 220 | 20% | 35V |
| C025 | C90-0912-05 | CAP. ELECTRO | 220 | 20% | 35V |
| C026 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C027 | CK45B2H472K | CAP. CERAMIC | 4700P | 10% | 500V |
| C028 | CE04W2A3R3M | CAP. ELECTRO | 3.3 | 20% | 100V |
| C029 | C91-0571-05 | CAP. CERAMIC | 0.01 | | 2KV |
| C030 | CK45E3D102P | CAP. CERAMIC | 1000P | | 2K |
| C031 | CC45CH1H180J | CAP. CERAMIC | 18P | 5% | 50V |
| C101 | CQ93FM1H103K | CAP. MYLAR | 0.01 | 10% | 50V |
| C102 | CQ93FM1H103K | CAP. MYLAR | 0.01 | 10% | 50V |
| C103 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C104 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C105 | CC45CH1H121J | CAP. CERAMIC | 120P | 5% | 50V |
| C106 | CE04W1H100M | CAP. ELECTRO | 10 | 20% | 50V |
| C107 | NO USE | | | | |
| C108 | C90-0298-05 | CAP. CERAMIC | 0.1 | 20% | 12V |
| C109 | CK45B1H472K | CAP. CERAMIC | 4700P | 10% | 50V |
| C110 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C111 | CC45CH1H101J | CAP. CERAMIC | 100P | 5% | 50V |
| C112 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C113 | CC45CH1H101J | CAP. CERAMIC | 100P | 5% | 50V |
| C114 | CE04BW1H010M | CAP. ELECTRO | 1 | 20% | 50V |
| C115 | CE04W1A101M | CAP. ELECTRO | 100 | 20% | 10V |
| C116 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C117 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C118 | CC45CH2H100D | CAP. CERAMIC | 10P | 0.5P | 500V |
| C119 | CC45CH2H040C | CAP. CERAMIC | 4P | 0.25P | 500V |
| C120 | CF93AN2A105J | CAP. POLYESTHEL | 1 | 5% | 100V |
| C121 | CQ93BP2A103F | CAP. MYLAR | 0.01 | 1% | 100V |
| C122 | CM93BD2A900J | CAP. MICA | 90P | 5% | 100V |
| C123 | CQ93FM1H102K | CAP. MYLAR | 1000P | 10% | 50V |
| C124 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C125 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C126 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C127 | CC45FCH1H330J | CAP. CERAMIC | 33P | 5% | 50V |
| C128 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C129 | CE04W1H010M | CAP. ELECTRO | 1 | 20% | 50V |
| C130 | NO USE | | | | |
| C131 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C132 | NO USE | | | | |
| C133 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C134 | CC45FCH1H270J | CAP. CERAMIC | 27P | 5% | 50V |
| C135 | CC45CH2H010C | CAP. CERAMIC | 1P | 0.25P | 500V |
| C136 | CM93BD2A151J | CAP. MICA | 150P | 5% | 100V |
| C137 | CC45CH1H680J | CAP. CERAMIC | 68P | 5% | 50V |
| C138 | NO USE | | | | |
| C139 | CC45CH2H060D | CAP. CERAMIC | 6P | 0.5P | 500V |
| C140 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C141 | CK45FB1H102K | CAP. CERAMIC | 1000P | 10% | 50V |

# PARTS LIST

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| C142 | CC45CH1H221J | CAP. CERAMIC | 220P | 5% | 50V |
| C143 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C144 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C145 | C90-0298-05 | CAP. CERAMIC | 0.1 | 20% | 12V |
| C146 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C147 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C148 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C149 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C150 | CE04W1E101M | CAP. ELECTRO | 100 | 20% | 25V |
| C151 | CE04W1A221M | CAP. ELECTRO | 220 | 20% | 10V |
| C152 | CE04W1E101M | CAP. ELECTRO | 100 | 20% | 25V |
| C153 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C154 | CE04W2E4R7 | CAP. ELECTRO | 4.7 | | 250V |
| C155 | CK45B2H472K | CAP. CERAMIC | 4700P | 10% | 500V |
| C158 | CC45FCH1H150J | CAP. CERAMIC | 15P | 5% | 50V |
| C159 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C160 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C161 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C162 | NO USE | | | | |
| C163 | CC45FCH1H100D | CAP. CERAMIC | 10P | 0.5P | 50V |
| C164 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C165 | CC45CH1H101J | CAP. CERAMIC | 100P | 5% | 50V |
| C166 | NO USE | | | | |
| C167 | CC45CH1H101J | CAP. CERAMIC | 100P | 5% | 50V |
| C168 | CE04W1E101M | CAP. ELECTRO | 100 | 20% | 25V |
| C169 | NO USE | | | | |
| C170 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C171 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C172 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C173 | C90-0298-05 | CAP. CERAMIC | 0.1 | 20% | 12V |
| C174 | C90-0298-05 | CAP. CERAMIC | 0.1 | 20% | 12V |
| C175 | NO USE | | | | |
| C176 | CK45B1H152K | CAP. CERAMIC | 1500P | 10% | 50V |
| D001 | DS442X | DIODE, SILICON | SWITCHING | | |
| D002 | DS442X | DIODE, SILICON | SWITCHING | | |
| D003 | NO USE | | | | |
| D004 | W06C | DIODE, SILICON | RECTIFIER | | |
| D005 | W06C | DIODE, SILICON | RECTIFIER | | |
| D006 | 1SS83 | DIODE, SILICON | SWITCHING | | |
| D007 | 1SS83 | DIODE, SILICON | SWITCHING | | |
| D008 | DS442X | DIODE, SILICON | SWITCHING | | |
| D009 | DS442X | DIODE, SILICON | SWITCHING | | |
| D101 | DS442X | DIODE, SILICON | SWITCHING | | |
| D102 | NO USE | | | | |
| D103 | DS442X | DIODE, SILICON | SWITCHING | | |
| D104 | DS442X | DIODE, SILICON | SWITCHING | | |
| D105 | DS442X | DIODE, SILICON | SWITCHING | | |
| D106 | DS442X | DIODE, SILICON | SWITCHING | | |
| D107 | DS442X | DIODE, SILICON | SWITCHING | | |
| D108 | DS442X | DIODE, SILICON | SWITCHING | | |
| D109 | DS442X | DIODE, SILICON | SWITCHING | | |
| D110 | DS442X | DIODE, SILICON | SWITCHING | | |
| D111 | DS442X | DIODE, SILICON | SWITCHING | | |
| D112 | DS442X | DIODE | | | |
| D113 | DS442X | DIODE | | | |
| D114 | NO USE | | | | |
| D115 | DS442X | DIODE | | | |
| D116 | NO USE | | | | |
| D117 | MTZ5.1JB | DIODE, ZENER | 5V | | |
| D121 | DS442X | DIODE, SILICON | SWITCHING | | |
| D124 | DS442X | DIODE | | | |
| D125 | DS442X | DIODE | | | |
| L001 | L40-1011-13 | FERRI INDUCTOR | 100UH | | |
| L002 | L40-1011-13 | FERRI INDUCTOR | 100UH | | |
| L003 | L40-1021-03 | FERRI INDUCTOR | | | |
| L004 | L40-1021-13 | FERRI INDUCTOR | | | |
| L005 | L40-1021-13 | FERRI INDUCTOR | | | |
| L006 | L40-1021-13 | FERRI INDUCTOR | | | |
| L007 | L40-1021-13 | FERRI INDUCTOR | | | |
| L008 | L40-4791-02 | FERRI INDUCTOR | 4.7UH | | |
| L101 | L40-1011-13 | FERRI INDUCTOR | 100UH | | |
| NL001 | NE-2B | NEON LAMP | | | |
| NL002 | NE-2B | NEON LAMP | | | |
| P001 | E40-0274-05 | PIN CONNECTOR | 2 P | | |
| P002 | E40-0374-05 | PIN CONNECTOR | 3P | | |
| P003 | E40-0335-05 | PIN CONNECTOR | 3P | | |
| P004 | E40-0535-05 | PIN CONNECTOR | 5P | | |
| P005 | E40-0233-05 | PIN CONNECTOR | 2P | | |
| P101 | E40-1116-05 | PIN CONNECTOR | 11P | | |
| P102 | E40-1116-05 | PIN CONNECTOR | 11P | | |
| P103 | E40-0273-05 | PIN CONNECTOR | 2 P | | |
| Q001 | 2SC2912(S) | TR. SI, NPN | | | |
| Q002 | 2SA1210(S) | TR. SI, PNP | | | |
| Q003 | 2SD613(E) | TR. SI, NPN | | | |
| Q004 | 2SC2785(F) | TR. SI, NPN | | | |
| Q005 | 2SC2271(D) | TR. SI, NPN | | | |
| Q101 | 2SK117(Y) | FET. N-CHANNEL | | | |
| Q102 | 2SK117(Y) | FET. N-CHANNEL | | | |
| Q103 | 2SC2785(F) | TR. SI, NPN | | | |
| Q104 | 2SC2785(F) | TR. SI, NPN | | | |
| Q105 | 2SC2785(F) | TR. SI, NPN | | | |
| Q106 | 2SC2785(F) | TR. SI, NPN | | | |
| Q107 | 2SA1175(F) | TR. SI, PNP | | | |
| Q108 | 2SA1175(F) | TR. SI, PNP | | | |
| Q109 | 2SA838(C) | TR. SI, PNP | | | |
| Q110 | 2SA838(C) | TR. SI, PNP | | | |
| Q111 | 2SA1175(F) | TR. SI, PNP | | | |
| Q112 | 2SA1175(F) | TR. SI, PNP | | | |
| Q113 | 2SC2785(F) | TR. SI, NPN | | | |
| Q114 | 2SC2785(F) | TR. SI, NPN | | | |
| Q115 | 2SK117(Y) | FET. N-CHANNEL | | | |
| Q116 | 2SC2785(F) | TR. SI, NPN | | | |
| Q117 | 2SC2785(F) | TR. SI, NPN | | | |
| Q118 | 2SC2785(F) | TR. SI, NPN | | | |
| Q119 | 2SC2785(F) | TR. SI, NPN | | | |
| Q120 | 2SC2785(F) | TR. SI, NPN | | | |
| Q121 | 2SA1175(F) | TR. SI, PNP | | | |
| Q122 | 2SA1175(F) | TR. SI, PNP | | | |
| Q123 | 2SA1175(F) | TR. SI, PNP | | | |
| Q124 | 2SC2912(S) | TR. SI, NPN | | | |
| Q125 | 2SA1210(S) | TR. SI, PNP | | | |
| Q126 | 2SC2785(F) | TR. SI, NPN | | | |
| Q127 | 2SC2912(S) | TR. SI, NPN | | | |
| Q128 | 2SC2785(F) | TR. SI, NPN | | | |
| Q129 | 2SC2785(F) | TR. SI, NPN | | | |
| R001 | RN14BK2E4701F | RES. METAL FILM | 4.7K | 1% | 1/4W |
| R002 | RD14BB2E221J | RES. CARBON | 220 | 5% | 1/4W |
| R003 | RD14BB2E183J | RES. CARBON | 18K | 5% | 1/4W |
| R004 | RD14BB2E104J | RES. CARBON | 100K | 5% | 1/4W |
| R005 | RN14BK2E4702F | RES. METAL FILM | 47K | 1% | 1/4W |
| R006 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R007 | RN14BK2E3303F | RES. METAL FILM | 330K | 1% | 1/4W |
| R008 | RD14BB2E102J | RES. CARBON | 1K | 5% | 1/4W |
| R009 | RD14BB2E104J | RES. CARBON | 100K | 5% | 1/4W |
| R010 | RD14BB2E472J | RES. CARBON | 4.7K | 5% | 1/4W |
| R011 | RD14BB2E221J | RES. CARBON | 220 | 5% | 1/4W |
| R012 | RD14BB2E103J | RES. CARBON | 10K | 5% | 1/4W |
| R013 | R92-1033-05 | RES. FIXED | 33M | | |
| R014 | RD14BB2E334J | RES. CARBON | 330K | 5% | 1/4W |
| R015 | R92-1034-05 | RES. METAL FILM | 47M | | |
| R016 | R92-1031-05 | RES. FIXED | 4.7M | | |
| R017 | R92-0800-05 | RES. FIXED | 10M | | |
| R018 | RD14BB2E823J | RES. CARBON | 82K | 5% | 1/4W |
| R019 | RD14BB2E393J | RES. CARBON | 39K | 5% | 1/4W |
| R020 | RD14BB2E333J | RES. CARBON | 33K | 5% | 1/4W |
| R021 | RD14BB2E473J | RES. CARBON | 47K | 5% | 1/4W |
| R022 | RD14BB2E103J | RES. CARBON | 10K | 5% | 1/4W |
| R023 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R024 | RN14BK2E6800F | RES. METAL FILM | 680 | 1% | 1/4W |
| R025 | RN14BK2E2402F | RES. METAL FILM | 24K | 1% | 1/4W |
| R026 | RN14BK2E1302F | RES. METAL FILM | 13K | 1% | 1/4W |
| R027 | RD14BB2E102J | RES. CARBON | 1K | 5% | 1/4W |
| R028 | RD14BB2E562J | RES. CARBON | 5.6K | 5% | 1/4W |
| R029 | RD14BB2E4R7J | RES. CARBON | 4.7 | 5% | 1/4W |
| R030 | NO USE | | | | |
| R031 | RD14BB2E470J | RES. CARBON | 47 | 5% | 1/4W |
| R032 | RD14BB2E224J | RES. CARBON | 220K | 5% | 1/4W |
| R033 | RD14BB2E563J | RES. CARBON | 56K | 5% | 1/4W |
| R101 | RN14BK2E1004F | RES. METAL FILM | 1M | 1% | 1/4W |
| R102 | RD14BB2E104J | RES. CARBON | 100K | 5% | 1/4W |
| R103 | RD14BB2E153J | RES. CARBON | 15K | 5% | 1/4W |
| R104 | RD14BB2E153J | RES. CARBON | 15K | 5% | 1/4W |
| R105 | RD14BB2E201J | RES. CARBON | 200 | 5% | 1/4W |
| R106 | RD14BB2E302J | RES. CARBON | 3K | 5% | 1/4W |
| R107 | RN14BK2E3301F | RES. METAL FILM | 3.3K | 1% | 1/4W |
| R108 | RN14BK2E3300F | RES. METAL FILM | 330 | 1% | 1/4W |
| R109 | RN14BK2E3600F | RES. METAL FILM | 360 | 1% | 1/4W |
| R110 | RN14BK2E4701F | RES. METAL FILM | 4.7K | 1% | 1/4W |
| R111 | RN14BK2E5101F | RES. METAL FILM | 5.1K | 1% | 1/4W |
| R112 | RD14BB2E103J | RES. CARBON | 10K | 5% | 1/4W |
| R113 | RD14BB2E183J | RES. CARBON | 18K | 5% | 1/4W |
| R114 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R115 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R116 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R117 | RD14BB2E472J | RES. CARBON | 4.7K | 5% | 1/4W |
| R118 | RD14BB2E105J | RES. CARBON | 1M | 5% | 1/4W |
| R119 | RD14BB2E622J | RES. CARBON | 6.2K | 5% | 1/4W |
| R120 | RD14BB2E102J | RES. CARBON | 1K | 5% | 1/4W |
| R121 | RD14BB2E472J | RES. CARBON | 4.7K | 5% | 1/4W |
| R122 | RN14BK2E2701F | RES. METAL FILM | 2.7K | 1% | 1/4W |
| R123 | RN14BK2E3600F | RES. METAL FILM | 360 | 1% | 1/4W |
| R124 | RN14BK2E3600F | RES. METAL FILM | 360 | 1% | 1/4W |
| R125 | RD14BB2E102J | RES. CARBON | 1K | 5% | 1/4W |
| R126 | RN14BK2E1002F | RES. METAL FILM | 10K | 1% | 1/4W |
| R127 | RN14BK2E2701F | RES. METAL FILM | 2.7K | 1% | 1/4W |
| R128 | RD14BB2E102J | RES. CARBON | 1K | 5% | 1/4W |
| R129 | RD14BB2E561J | RES. CARBON | 560 | 5% | 1/4W |
| R130 | RD14BB2E182J | RES. CARBON | 1.8K | 5% | 1/4W |

# PARTS LIST

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| R131 | RD14BB2E681J | RES. CARBON | 680 | 5% | 1/4W |
| R132 | RD14BB2E472J | RES. CARBON | 4.7K | 5% | 1/4W |
| R133 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R134 | RD14BB2E102J | RES. CARBON | 1K | 5% | 1/4W |
| R135 | RD14BB2E472J | RES. CARBON | 4.7K | 5% | 1/4W |
| R136 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R137 | RD14BB2E102J | RES. CARBON | 1K | 5% | 1/4W |
| R138 | RD14BB2E102J | RES. CARBON | 1K | 5% | 1/4W |
| R139 | RD14BB2E562J | RES. CARBON | 5.6K | 5% | 1/4W |
| R140 | RD14BB2E221J | RES. CARBON | 220 | 5% | 1/4W |
| R141 | RD14BB2E221J | RES. CARBON | 220 | 5% | 1/4W |
| R142 | RD14BB2C220J | RES. CARBON | 22 | 5% | 1/6W |
| R143 | RD14BB2E472J | RES. CARBON | 4.7K | 5% | 1/4W |
| R144 | RD14BB2E103J | RES. CARBON | 10K | 5% | 1/4W |
| R145 | RD14BB2E182J | RES. CARBON | 1.8K | 5% | 1/4W |
| R146 | RD14BB2E472J | RES. CARBON | 4.7K | 5% | 1/4W |
| R147 | RN14BK2E3302F | RES. METAL FILM | 33K | 1% | 1/4W |
| R148 | RD14BB2E102J | RES. CARBON | 1K | 5% | 1/4W |
| R149 | RN14BK2E3602F | RES. METAL FILM | 36K | 1% | 1/4W |
| R150 | RS14GB3D183J | RES. METAL FILM | 18K | 5% | 2W |
| R151 | RD14BB2E102J | RES. CARBON | 1K | 5% | 1/4W |
| R152 | RD14BB2E153J | RES. CARBON | 15K | 5% | 1/4W |
| R153 | RD14BB2E153J | RES. CARBON | 15K | 5% | 1/4W |
| R154 | RD14BB2E133J | RES. CARBON | 13K | 5% | 1/4W |
| R155 | RD14BB2C132J | RES. CARBON | 1.3K | 5% | 1/6W |
| R156 | RN14BK2E1201F | RES. METAL FILM | 1.2K | 1% | 1/4W |
| R157 | RN14BK2E1201F | RES. METAL FILM | 1.2K | 1% | 1/4W |
| R158 | RN14BK2E4301F | RES. METAL FILM | 4.3K | 1% | 1/4W |
| R159 | RN14BK2E9101F | RES. METAL FILM | 9.1K | 1% | 1/4W |
| R160 | RN14BK2E3004F | RES. METAL FILM | 3M | 1% | 1/4W |
| R161 | RN14BK2E1004F | RES. METAL FILM | 1M | 1% | 1/4W |
| R162 | RN14BK2E5003F | RES. METAL FILM | 500K | 1% | 1/4W |
| R163 | RN14BK2E3003F | RES. METAL FILM | 300K | 1% | 1/4W |
| R164 | RN14BK2E1003F | RES. METAL FILM | 100K | 1% | 1/4W |
| R165 | RN14BK2E5002F | RES. METAL FILM | 50K | 1% | 1/4W |
| R166 | RN14BK2E3002F | RES. METAL FILM | 30K | 1% | 1/4W |
| R167 | RN14BK2E2002F | RES. METAL FILM | 20K | 1% | 1/4W |
| R168 | RD14BB2E472J | RES. CARBON | 4.7K | 5% | 1/4W |
| R169 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R170 | RD14BB2E472J | RES. CARBON | 4.7K | 5% | 1/4W |
| R171 | RN14BK2E4701F | RES. METAL FILM | 4.7K | 1% | 1/4W |
| R172 | RD14BB2E472J | RES. CARBON | 4.7K | 5% | 1/4W |
| R173 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R174 | RD14BB2E391J | RES. CARBON | 390 | 5% | 1/4W |
| R175 | RN14BK2E2201F | RES. METAL FILM | 2.2K | 1% | 1/4W |
| R176 | RN14BK2E2201F | RES. METAL FILM | 2.2K | 1% | 1/4W |
| R177 | RD14BB2E182J | RES. CARBON | 1.8K | 5% | 1/4W |
| R178 | RD14BB2E182J | RES. CARBON | 1.8K | 5% | 1/4W |
| R179 | RD14BB2E103J | RES. CARBON | 10K | 5% | 1/4W |
| R180 | RN14BK2E9101F | RES. METAL FILM | 9.1K | 1% | 1/4W |
| R181 | RD14BB2E103J | RES. CARBON | 10K | 5% | 1/4W |
| R182 | RD14BB2E103J | RES. CARBON | 10K | 5% | 1/4W |
| R183 | RD14BB2E683J | RES. CARBON | 68K | 5% | 1/4W |
| R184 | RD14BB2E621J | RES. CARBON | 620 | 5% | 1/4W |
| R185 | RD14BB2E102J | RES. CARBON | 1K | 5% | 1/4W |
| R186 | RD14BB2E473J | RES. CARBON | 47K | 5% | 1/4W |
| R187 | RD14BB2E183J | RES. CARBON | 18K | 5% | 1/4W |
| R188 | RD14BB2E103J | RES. CARBON | 10K | 5% | 1/4W |
| R189 | RD14BB2E102J | RES. CARBON | 1K | 5% | 1/4W |
| R190 | RS14GB3D103J | RES. METAL FILM | 10K | 5% | 2W |
| R191 | RD14BB2E683J | RES. CARBON | 68K | 5% | 1/4W |
| R192 | RD14BB2E103J | RES. CARBON | 10K | 5% | 1/4W |
| R193 | RD14BB2E122J | RES. CARBON | 1.2K | 5% | 1/4W |
| R194 | RD14BB2E122J | RES. CARBON | 1.2K | 5% | 1/4W |
| R195 | RD14BB2E821J | RES. CARBON | 820 | 5% | 1/4W |
| R196 | RD14BB2E821J | RES. CARBON | 820 | 5% | 1/4W |
| R197 | NO USE | | | | |
| R198 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R199 | RD14BB2E221J | RES. CARBON | 220 | 5% | 1/4W |
| R205 | RD14BB2E102J | RES. CARBON | 1K | 5% | 1/4W |
| R206 | RD14BB2E363J | RES. CARBON | 36K | 5% | 1/4W |
| R207 | RN14BK2E1202F | RES. METAL FILM | 12K | 1% | 1/4W |
| R210 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R211 | RD14BB2E470J | RES. CARBON | 47 | 5% | 1/4W |
| R212 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R213 | NO USE | | | | |
| R214 | RN14BK2E5101F | RES. METAL FILM | 5.1K | 1% | 1/4W |
| R217 | RD14BB2E183J | RES. CARBON | 18K | 5% | 1/4W |
| R221 | RD14BB2E133J | RES. CARBON | 13K | 5% | 1/4W |
| R222 | RD14BB2C102J | RES. CARBON | 1K | 5% | 1/6W |
| R225 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R226 | NO USE | | | | |
| R227 | RD14BB2C102J | RES. CARBON | 1K | 5% | 1/6W |
| R228 | RD14BB2C133J | RES. CARBON | 13K | 5% | 1/6W |
| S101 | R01-3510-05 | V.R. WITH SW. | 10K B | | |
| S102 | R01-3510-05 | V.R. WITH SW. | 10K B | | |
| S103 | S02-2505-15 | ROTARY SWITCH | WITH VR.2KB | | |
| S104 | S33-2501-05 | LEVER SWITCH | | | |
| S105 | S32-2012-05 | LEVER SWITCH | | | |
| S106 | S32-4007-05 | SLIDE SWITCH | | | |

| REF.NO | PARTS NO | NAME & DESCRIPTION |
|---|---|---|
| T001 | L19-0412-05 | CONVERTOR TRANSFORMER |
| TC101 | C05-0422-05 | CAP. TRIMMER 20P |
| TC102 | C05-0421-05 | CAP. TRIMMER 10P |
| U001 | NJM4558D | IC |
| U101 | MC10103L | IC, QUAD 2-INPUT OR GATE |
| U102 | SN74LS112N | IC |
| U103 | SN74LS02N | IC, QUAD 2-INPUT NOR GATE |
| U104 | SN74LS00N | IC |
| U105 | SN74LS08N | IC, QUAD 2-INPUT AND GATE |
| VR001 | R12-5516-05 | RES. SEMI FIXED 100K B |
| VR101 | R01-3510-05 | V.R. WITH SW. 10K B |
| VR102 | R01-3510-05 | V.R. WITH SW. 10K B |
| VR103 | S02-2505-15 | ROTARY SWITCH WITH VR.2KB |
| VR104 | R12-3520-05 | RES. SEMI FIXED 10K B |
| VR105 | R12-1518-05 | RES. SEMI FIXED 2K B |
| VR106 | R12-0421-05 | RES. SEMI FIXED 100 B |
| VR107 | R12-1517-05 | RES. SEMI FIXED 1K B |
| VR108 | NO USE | |
| VR109 | R12-5518-05 | RES. SEMI FIXED 200K OHM B |
| VR110 | NO USE | |
| VR111 | R12-0540-05 | RES. SEMI FIXED 500 B |

## HORIZONTAL & HIGH VOLTAGE UNIT

## (X74-1340-01)

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| | E23-0015-04 | EARTH LUG | | | |
| | E23-0046-04 | TERMINAL | | | |
| | E31-2170-05 | JUMPING WIRE | | | |
| | E33-4029-00 | WIRE ASSY | | | |
| | F01-0230-04 | HEAT SINK | | | |
| | F01-0820-04 | HEAT SINK | | | |
| | F01-0835-05 | HEAT SINK | | | |
| | F15-0727-04 | HOLDER (NEON TUBE) | | | |
| | F20-0622-05 | INSULATOR | | | |
| | J25-2998-13 | PCB (UNMOUNTED) | | | |
| | J31-0604-04 | COLLAR | | | |
| | J31-0604-04 | COLLAR | | | |
| | N19-0191-05 | WASHER NONMETAL | | | |
| | N30-3006-46 | SCREW, PAN HD | M 3X6 | | |
| | N30-3008-46 | SCREW, PAN HD | M 3X8 | | |
| | R92-0150-05 | JUMPING RES. | ZERO OHM | | |
| | W02-0408-05 | HIGH VOLTAGE POWER BLOCK | | | |
| | 212-3013-05 | TUBE (PLASTIC) | | | |
| C001 | CC45FCH1H330J | CAP. CERAMIC | 33P | 5% | 50V |
| C002 | CC45CH2H010C | CAP. CERAMIC | 1P | 0.25P | 500V |
| C003 | CK45B2H472K | CAP. CERAMIC | 4700P | 10% | 500V |
| C004 | CE04FW1H100M | CAP. ELECTRO | 10 | 20% | 50V |
| C005 | CE04W2E100M | CAP. ELECTRO | 10 | 20% | 250V |
| C006 | CQ93FM1H104K | CAP. MYLAR | 0.1 | 10% | 50V |
| C007 | CQ93FM1H153K | CAP. MYLAR | 0.015 | 10% | 50V |
| C008 | CE04W1V471M | CAP. ELECTRO | 470 | 20% | 35V |
| C009 | CQ93FM1H104K | CAP. MYLAR | 0.1 | 10% | 50V |
| C010 | CQ93FM1H223K | CAP. MYLAR | 0.022 | 10% | 50V |
| C011 | CK45B2H102K | CAP. CERAMIC | 1000P | 10% | 500V |
| C012 | CK45E3D103P | CAP. CERAMIC | 0.01 | | 2K |
| C013 | CK45E3D103P | CAP. CERAMIC | 0.01 | | 2K |
| C014 | NO USE | | | | |
| C015 | CE04W2E010M | CAP. ELECTRO | 1 | 20% | 250V |
| C016 | CE04W2E4R7M | CAP. ELECTRO | 4.7 | 20% | 250V |
| C017 | CK45B2H472K | CAP. CERAMIC | 4700P | 10% | 500V |
| C018 | CE04FW1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C019 | CC45FCH1H100D | CAP. CERAMIC | 10P | 0.5P | 50V |
| C020 | CE04W1E101M | CAP. ELECTRO | 100 | 20% | 25V |
| C021 | CK45B2H103K | CAP. CERAMIC | 0.01 | 10% | 500V |
| C022 | CE04W1E101M | CAP. ELECTRO | 100 | 20% | 25V |
| C023 | CE04W1E101M | CAP. ELECTRO | 100 | 20% | 25V |
| C024 | C90-0912-05 | CAP. ELECTRO | 220 | 20% | 35V |
| C025 | C90-0912-05 | CAP. ELECTRO | 220 | 20% | 35V |
| C026 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C027 | CK45B2H472K | CAP. CERAMIC | 4700P | 10% | 500V |
| C028 | CE04FW2A3R3M | CAP. ELECTRO | 3.3 | 20% | 100V |
| C029 | C91-0571-05 | CAP. CERAMIC | 0.01 | | 2KV |
| C030 | CK45E3D102P | CAP. CERAMIC | 1000P | | 2K |
| C031 | CC45FCH1H180J | CAP. CERAMIC | 18P | 5% | 50V |
| C101 | CQ93FM1H103K | CAP. MYLAR | 0.01 | 10% | 50V |
| C102 | CQ93FM1H103K | CAP. MYLAR | 0.01 | 10% | 50V |
| C103 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C104 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C105 | CC45CH1H221J | CAP. CERAMIC | 220P | 5% | 50V |
| C106 | CE04FW1H100M | CAP. ELECTRO | 10 | 20% | 50V |
| C107 | NO USE | | | | |
| C108 | CE04HW1H010M | CAP. ELECTRO | 1 | 20% | 50V |
| C109 | CK45B1H472K | CAP. CERAMIC | 4700P | 10% | 50V |
| C110 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C111 | CC45CH1H101J | CAP. CERAMIC | 100P | 5% | 50V |
| C112 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |

# PARTS LIST

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| C113 | CC45CH1H101J | CAP. CERAMIC | 100P | 5% | 50V |
| C114 | CE04HW1H010M | CAP. ELECTRO | 1 | 20% | 50V |
| C115 | CE04FW1A101M | CAP. ELECTRO | 100 | 20% | 10V |
| C116 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C117 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C118 | CC45CH2H100D | CAP. CERAMIC | 10P | 0.5P | 500V |
| C119 | CC45CH2H040C | CAP. CERAMIC | 4P | 0.25P | 500V |
| C120 | CF93AN2A105J | CAP. POLYESTHEL | 1 | 5% | 100V |
| C121 | CQ93BP2A103F | CAP. MYLAR | 0.01 | 1% | 100V |
| C122 | CM93BD2A900J | CAP. MICA | 90P | 5% | 100V |
| C123 | CQ93FM1H102K | CAP. MYLAR | 1000P | 10% | 50V |
| C124 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C125 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C126 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C127 | CC45FCH1H330J | CAP. CERAMIC | 33P | 5% | 50V |
| C128 | CE04FW1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C129 | CE04FW1H010M | CAP. ELECTRO | 1 | 20% | 50V |
| C130 | NO USE | | | | |
| C131 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C132 | NO USE | | | | |
| C133 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C134 | CC45FCH1H270J | CAP. CERAMIC | 27P | 5% | 50V |
| C135 | CC45CH2H010C | CAP. CERAMIC | 1P | 0.25P | 500V |
| C135 | CC45CH2H030C | CAP. CERAMIC | 3P | 0.25P | 500V |
| C136 | CM93BD2A151J | CAP. MICA | 150P | 5% | 100V |
| C137 | CC45CH1H680J | CAP. CERAMIC | 68P | 5% | 50V |
| C138 | CC45CH2H060D | CAP. CERAMIC | 6P | 0.5P | 500V |
| C139 | CC45CH2H060D | CAP. CERAMIC | 6P | 0.5P | 500V |
| C140 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C143 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C144 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C145 | C91-0572-05 | CAP. CERAMIC | 0.1 | | 12V |
| C146 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C147 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C148 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C149 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C150 | CE04W1E101M | CAP. ELECTRO | 100 | 20% | 25V |
| C151 | CE04W1A221M | CAP. ELECTRO | 220 | 20% | 10V |
| C152 | CE04W1E101M | CAP. ELECTRO | 100 | 20% | 25V |
| C153 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C154 | CE04W2E4R7M | CAP. ELECTRO | 4.7 | 20% | 250V |
| C155 | CK45B2H472K | CAP. CERAMIC | 4700P | 10% | 500V |
| C156 | NO USE | | | | |
| C157 | CQ93FM1H103K | CAP. MYLAR | 0.01 | 10% | 50V |
| C158 | CC45FCH1H150J | CAP. CERAMIC | 15P | 5% | 50V |
| C159 | CE04FW1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C160 | CE04FW1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C161 | CE04FW1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C162 | NO USE | | | | |
| C163 | CC45FCH1H100D | CAP. CERAMIC | 10P | 0.5P | 50V |
| C164 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C165 | CC45CH1H101J | CAP. CERAMIC | 100P | 5% | 50V |
| C166 | CC45FCH1H100D | CAP. CERAMIC | 10P | 0.5P | 50V |
| C167 | CC45CH1H101J | CAP. CERAMIC | 100P | 5% | 50V |
| C168 | CE04W1E101M | CAP. ELECTRO | 100 | 20% | 25V |
| C169 | NO USE | | | | |
| C170 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C171 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C172 | NO USE | | | | |
| C173 | C91-0572-05 | CAP. CERAMIC | 0.1 | | 12V |
| C174 | C91-0572-05 | CAP. CERAMIC | 0.1 | | 12V |
| D001 | DS442X | DIODE | | | |
| D002 | DS442X | DIODE | | | |
| D003 | NO USE | | | | |
| D004 | W06C | DIODE SILICON | RECTIFIER | | |
| D005 | W06C | DIODE SILICON | RECTIFIER | | |
| D006 | 1SS83 | DIODE SILICON | SWITCHING | | |
| D007 | 1SS83 | DIODE SILICON | SWITCHING | | |
| D008 | DS442X | DIODE | | | |
| D009 | DS442X | DIODE | | | |
| D101 | DS442X | DIODE | | | |
| D102 | NO USE | | | | |
| D103 | DS442X | DIODE | | | |
| D104 | DS442X | DIODE | | | |
| D105 | DS442X | DIODE | | | |
| D106 | DS442X | DIODE | | | |
| D107 | DS442X | DIODE | | | |
| D108 | DS442X | DIODE | | | |
| D109 | DS442X | DIODE | | | |
| D110 | DS442X | DIODE | | | |
| D111 | DS442X | DIODE | | | |
| D117 | WZ-050 | DIODE, ZENER | 5V | | |
| D118 | DS442X | DIODE | | | |
| D119 | NO USE | | | | |
| D120 | DS442X | DIODE | | | |
| D121 | DS442X | DIODE | | | |
| D124 | DS442X | DIODE | | | |
| D125 | DS442X | DIODE | | | |

| REF.NO | PARTS NO | NAME & DESCRIPTION | |
|---|---|---|---|
| L001 | L40-1011-13 | FERRI INDUCTOR | |
| L002 | L40-1011-13 | FERRI INDUCTOR | |
| L003 | L40-1021-03 | FERRI INDUCTOR | |
| L004 | L40-1021-13 | FERRI INDUCTOR | |
| L005 | L40-1021-13 | FERRI INDUCTOR | |
| L006 | L40-1021-13 | FERRI INDUCTOR | |
| L007 | L40-1021-13 | FERRI INDUCTOR | |
| L008 | L40-4791-02 | FERRI INDUCTOR | |
| L101 | L40-1011-13 | FERRI INDUCTOR | |
| NL001 | NE-2B | NEON LAMP | |
| NL002 | NE-2B | NEON LAMP | |
| P001 | E40-0274-05 | PIN CONNECTOR | 2P |
| P002 | E40-0374-05 | PIN CONNECTOR | 3P |
| P003 | E40-0335-05 | PIN CONNECTOR | 3P |
| P004 | E40-0535-05 | PIN CONNECTOR | 5P |
| P005 | E40-0233-05 | PIN CONNECTOR | 2P |
| P101 | E40-1116-05 | PIN CONNECTOR | 11P |
| P102 | E40-1116-05 | PIN CONNECTOR | 11P |
| P103 | E40-0273-05 | PIN CONNECTOR | 2 CONTACT |
| Q001 | 2SC2912(S) | TR. SI, NPN | |
| Q002 | 2SA1210(S) | TR. SI, PNP | |
| Q003 | 2SD613(E) | TR. SI, NPN | |
| Q004 | 2SC2785(F) | TR. SI, NPN | |
| Q005 | 2SC2271(D) | TR. SI, NPN | |
| Q101 | 2SK117(Y) | FET. N-CHANNEL | |
| Q102 | 2SK117(Y) | FET. N-CHANNEL | |
| Q103 | 2SC2785(F) | TR. SI, NPN | |
| Q104 | 2SC2785(F) | TR. SI, NPN | |
| Q105 | 2SC2785(F) | TR. SI, NPN | |
| Q106 | 2SC2785(F) | TR. SI, NPN | |
| Q107 | 2SA1175(F) | TR. SI, PNP | |
| Q108 | 2SA1175(F) | TR. SI, PNP | |
| Q109 | 2SA838(C) | TR. SI, PNP | |
| Q110 | 2SA838(C) | TR. SI, PNP | |
| Q111 | 2SA1175(F) | TR. SI, PNP | |
| Q112 | 2SA1175(F) | TR. SI, PNP | |
| Q113 | 2SC2785(F) | TR. SI, NPN | |
| Q114 | 2SC2785(F) | TR. SI, NPN | |
| Q115 | 2SK117(Y) | FET. N-CHANNEL | |
| Q116 | 2SC2785(F) | TR. SI, NPN | |
| Q117 | 2SC2785(F) | TR. SI, NPN | |
| Q118 | 2SC2785(F) | TR. SI, NPN | |
| Q119 | 2SC2785(F) | TR. SI, NPN | |
| Q120 | 2SC2785(F) | TR. SI, NPN | |
| Q121 | 2SA1175(F) | TR. SI, PNP | |
| Q122 | 2SA1175(F) | TR. SI, PNP | |
| Q123 | 2SA1175(F) | TR. SI, PNP | |
| Q124 | 2SC2912(S) | TR. SI, NPN | |
| Q125 | 2SA1210(S) | TR. SI, PNP | |
| Q126 | 2SC2785(F) | TR. SI, NPN | |
| Q127 | 2SC2912(S) | TR. SI, NPN | |
| Q128 | 2SC2785(F) | TR. SI, NPN | |
| Q129 | 2SC2785(F) | TR. SI, NPN | |
| Q130 | 2SK117(Y) | FET. N-CHANNEL | |
| Q131 | 2SA1175(F) | TR. SI, PNP | |

| | | | | | |
|---|---|---|---|---|---|
| R001 | RN14BK2E4701F | RES. METAL FILM | 4.7K | 1% | 1/4W |
| R002 | RD14BB2E221J | RES. CARBON | 220 | 5% | 1/4W |
| R003 | RD14BB2E183J | RES. CARBON | 18K | 5% | 1/4W |
| R004 | RD14BB2E104J | RES. CARBON | 100K | 5% | 1/4W |
| R005 | RN14BK2E4702F | RES. METAL FILM | 47K | 1% | 1/4W |
| R006 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R007 | RN14BK2E3303F | RES. METAL FILM | 330K | 1% | 1/4W |
| R008 | RD14BB2E102J | RES. CARBON | 1K | 5% | 1/4W |
| R009 | RD14BB2E104J | RES. CARBON | 100K | 5% | 1/4W |
| R010 | RD14BB2E472J | RES. CARBON | 4.7K | 5% | 1/4W |
| R011 | RD14BB2E221J | RES. CARBON | 220 | 5% | 1/4W |
| R012 | RD14BB2E103J | RES. CARBON | 10K | 5% | 1/4W |
| R013 | R92-1033-05 | RES. FIXED | 33M | | |
| R014 | RD14BB2E334J | RES. CARBON | 330K | 5% | 1/4W |
| R015 | R92-1034-05 | RES. METAL FILM | 47M | | |
| R016 | R92-1031-05 | RES. FIXED | 4.7M | | |
| R017 | R92-0800-05 | RES. FIXED | 10M | | |
| R018 | RD14BB2E823J | RES. CARBON | 82K | 5% | 1/4W |
| R019 | RD14BB2E393J | RES. CARBON | 39K | 5% | 1/4W |
| R020 | RD14BB2E333J | RES. CARBON | 33K | 5% | 1/4W |
| R021 | RD14BB2E473J | RES. CARBON | 47K | 5% | 1/4W |
| R022 | RD14BB2E103J | RES. CARBON | 10K | 5% | 1/4W |
| R023 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R024 | RN14BK2E6800F | RES. METAL FILM | 680 | 1% | 1/4W |
| R025 | RN14BK2E2402F | RES. METAL FILM | 24K | 1% | 1/4W |
| R026 | RN14BK2E1302F | RES. METAL FILM | 13K | 1% | 1/4W |
| R027 | RD14BB2E102J | RES. CARBON | 1K | 5% | 1/4W |
| R028 | RD14BB2E562J | RES. CARBON | 5.6K | 5% | 1/4W |
| R029 | RD14BB2E4R7J | RES. CARBON | 4.7 | 5% | 1/4W |
| R030 | NO USE | | | | |
| R031 | RD14BB2E470J | RES. CARBON | 47 | 5% | 1/4W |
| R032 | RD14BB2E224J | RES. CARBON | 220K | 5% | 1/4W |
| R033 | RD14BB2E563J | RES. CARBON | 56K | 5% | 1/4W |

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| R101 | RN14BK2E1004F | RES. METAL FILM | 1M | 1% | 1/4W |
| R102 | RD14BB2E104J | RES. CARBON | 100K | 5% | 1/4W |
| R103 | RD14BB2E153J | RES. CARBON | 15K | 5% | 1/4W |
| R104 | RD14BB2E153J | RES. CARBON | 15K | 5% | 1/4W |
| R105 | RD14BB2E152J | RES. CARBON | 1.5K | 5% | 1/4W |
| R106 | RD14BB2E223J | RES. CARBON | 22K | 5% | 1/4W |
| R107 | RN14BK2E3301F | RES. METAL FILM | 3.3K | 1% | 1/4W |
| R108 | RN14BK2E3300F | RES. METAL FILM | 330 | 1% | 1/4W |
| R109 | RN14BK2E3600F | RES. METAL FILM | 360 | 1% | 1/4W |
| R110 | RN14BK2E4701F | RES. METAL FILM | 4.7K | 1% | 1/4W |
| R111 | RN14BK2E5101F | RES. METAL FILM | 5.1K | 1% | 1/4W |
| R112 | RD14BB2E103J | RES. CARBON | 10K | 5% | 1/4W |
| R113 | RD14BB2E183J | RES. CARBON | 18K | 5% | 1/4W |
| R114 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R115 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R116 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R117 | RD14BB2E472J | RES. CARBON | 4.7K | 5% | 1/4W |
| R118 | RD14BB2E105J | RES. CARBON | 1M | 5% | 1/4W |
| R119 | RD14BB2E272J | RES. CARBON | 2.7K | 5% | 1/4W |
| R120 | RD14BB2E102J | RES. CARBON | 1K | 5% | 1/4W |
| R121 | RD14BB2E472J | RES. CARBON | 4.7K | 5% | 1/4W |
| R122 | RN14BK2E2701F | RES. METAL FILM | 2.7K | 1% | 1/4W |
| R123 | RN14BK2E3600F | RES. METAL FILM | 360 | 1% | 1/4W |
| R124 | RN14BK2E3600F | RES. METAL FILM | 360 | 1% | 1/4W |
| R125 | RD14BB2E102J | RES. CARBON | 1K | 5% | 1/4W |
| R126 | RN14BK2E1801F | RES. METAL FILM | 1.8K | 1% | 1/4W |
| R127 | RN14BK2E2701F | RES. METAL FILM | 2.7K | 1% | 1/4W |
| R128 | RD14BB2E102J | RES. CARBON | 1K | 5% | 1/4W |
| R129 | RD14BB2E561J | RES. CARBON | 560 | 5% | 1/4W |
| R130 | RD14BB2E182J | RES. CARBON | 1.8K | 5% | 1/4W |
| R131 | RD14BB2E681J | RES. CARBON | 680 | 5% | 1/4W |
| R132 | RD14BB2E472J | RES. CARBON | 4.7K | 5% | 1/4W |
| R133 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R134 | RD14BB2E102J | RES. CARBON | 1K | 5% | 1/4W |
| R135 | RD14BB2E472J | RES. CARBON | 4.7K | 5% | 1/4W |
| R136 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R137 | RD14BB2E102J | RES. CARBON | 1K | 5% | 1/4W |
| R138 | RD14BB2E102J | RES. CARBON | 1K | 5% | 1/4W |
| R139 | RD14BB2E562J | RES. CARBON | 5.6K | 5% | 1/4W |
| R140 | RD14BB2E221J | RES. CARBON | 220 | 5% | 1/4W |
| R141 | RD14BB2E221J | RES. CARBON | 220 | 5% | 1/4W |
| R142 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R143 | RD14BB2E472J | RES. CARBON | 4.7K | 5% | 1/4W |
| R144 | RD14BB2E103J | RES. CARBON | 10K | 5% | 1/4W |
| R145 | RD14BB2E182J | RES. CARBON | 1.8K | 5% | 1/4W |
| R146 | RD14BB2E472J | RES. CARBON | 4.7K | 5% | 1/4W |
| R147 | RN14BK2E3302F | RES. METAL FILM | 33K | 1% | 1/4W |
| R148 | RD14BB2E102J | RES. CARBON | 1K | 5% | 1/4W |
| R149 | RN14BK2E3602F | RES. METAL FILM | 36K | 1% | 1/4W |
| R150 | RS14GB3D183J | RES. METAL FILM | 18K | 5% | 2W |
| R151 | RD14BB2E102J | RES. CARBON | 1K | 5% | 1/4W |
| R152 | RD14BB2E153J | RES. CARBON | 15K | 5% | 1/4W |
| R153 | RD14BB2E153J | RES. CARBON | 15K | 5% | 1/4W |
| R154 | RD14BB2E133J | RES. CARBON | 13K | 5% | 1/4W |
| R155 | RD14BB2C152J | RES. CARBON | 1.5K | 5% | 1/6W |
| R156 | RN14BK2E1201F | RES. METAL FILM | 1.2K | 1% | 1/4W |
| R157 | RN14BK2E1201F | RES. METAL FILM | 1.2K | 1% | 1/4W |
| R158 | RN14BK2E6801F | RES. METAL FILM | 6.8K | 1% | 1/4W |
| R159 | RN14BK2E9101F | RES. METAL FILM | 9.1K | 1% | 1/4W |
| R160 | RN14BK2E3004F | RES. METAL FILM | 3M | 1% | 1/4W |
| R161 | RN14BK2E1004F | RES. METAL FILM | 1M | 1% | 1/4W |
| R162 | RN14BK2E5003F | RES. METAL FILM | 500K | 1% | 1/4W |
| R163 | RN14BK2E3003F | RES. METAL FILM | 300K | 1% | 1/4W |
| R164 | RN14BK2E1003F | RES. METAL FILM | 100K | 1% | 1/4W |
| R165 | RN14BK2E5002F | RES. METAL FILM | 50K | 1% | 1/4W |
| R166 | RN14BK2E3002F | RES. METAL FILM | 30K | 1% | 1/4W |
| R167 | RN14BK2E2002F | RES. METAL FILM | 20K | 1% | 1/4W |
| R168 | RD14BB2E472J | RES. CARBON | 4.7K | 5% | 1/4W |
| R169 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R170 | RD14BB2E472J | RES. CARBON | 4.7K | 5% | 1/4W |
| R171 | RN14BK2E4701F | RES. METAL FILM | 4.7K | 1% | 1/4W |
| R172 | RD14BB2E472J | RES. CARBON | 4.7K | 5% | 1/4W |
| R173 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R174 | RD14BB2E391J | RES. CARBON | 390 | 5% | 1/4W |
| R175 | RN14BK2E2201F | RES. METAL FILM | 2.2K | 1% | 1/4W |
| R176 | RN14BK2E2201F | RES. METAL FILM | 2.2K | 1% | 1/4W |
| R177 | RD14BB2E182J | RES. CARBON | 1.8K | 5% | 1/4W |
| R178 | RD14BB2E182J | RES. CARBON | 1.8K | 5% | 1/4W |
| R179 | RD14BB2E103J | RES. CARBON | 10K | 5% | 1/4W |
| R180 | RN14BK2E9101F | RES. METAL FILM | 9.1K | 1% | 1/4W |
| R181 | RD14BB2E103J | RES. CARBON | 10K | 5% | 1/4W |
| R182 | RD14BB2E103J | RES. CARBON | 10K | 5% | 1/4W |
| R183 | RD14BB2E683J | RES. CARBON | 68K | 5% | 1/4W |
| R184 | RD14BB2E621J | RES. CARBON | 620 | 5% | 1/4W |
| R185 | RD14BB2E102J | RES. CARBON | 1K | 5% | 1/4W |
| R186 | RD14BB2E473J | RES. CARBON | 47K | 5% | 1/4W |
| R187 | RD14BB2E183J | RES. CARBON | 18K | 5% | 1/4W |
| R188 | RD14BB2E103J | RES. CARBON | 10K | 5% | 1/4W |
| R189 | RD14BB2E102J | RES. CARBON | 1K | 5% | 1/4W |
| R190 | RS14GB3D103J | RES. METAL FILM | 10K | 5% | 2W |
| R191 | RD14BB2E683J | RES. CARBON | 68K | 5% | 1/4W |
| R192 | RD14BB2E103J | RES. CARBON | 10K | 5% | 1/4W |
| R195 | RD14BB2E821J | RES. CARBON | 820 | 5% | 1/4W |
| R196 | RD14BB2E821J | RES. CARBON | 820 | 5% | 1/4W |

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| R197 | NO USE | | | | |
| R198 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R199 | RD14BB2E221J | RES. CARBON | 220 | 5% | 1/4W |
| R200 | RN14BK2E1004F | RES. METAL FILM | 1M | 1% | 1/4W |
| R201 | RD14BB2E104J | RES. CARBON | 100K | 5% | 1/4W |
| R202 | RD14BB2E153J | RES. CARBON | 15K | 5% | 1/4W |
| R203 | RD14BB2E472J | RES. CARBON | 4.7K | 5% | 1/4W |
| R204 | RD14BB2E751J | RES. CARBON | 750 | 5% | 1/4W |
| R205 | RD14BB2E102J | RES. CARBON | 1K | 5% | 1/4W |
| R206 | RD14BB2E363J | RES. CARBON | 36K | 5% | 1/4W |
| R207 | RN14BK2E1202F | RES. METAL FILM | 12K | 1% | 1/4W |
| R210 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R211 | RD14BB2E470J | RES. CARBON | 47 | 5% | 1/4W |
| R212 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R213 | NO USE | | | | |
| R214 | RN14BK2E3601F | RES. METAL FILM | 3.6K | 1% | 1/4W |
| R217 | RD14BB2E183J | RES. CARBON | 18K | 5% | 1/4W |
| R221 | RD14BB2E133J | RES. CARBON | 13K | 5% | 1/4W |
| R222 | RD14BB2E102J | RES. CARBON | 1K | 5% | 1/4W |
| S103 | S02-2506-05 | ROTARY SWITCH | | | |
| S104 | S32-2012-05 | LEVER SWITCH | | | |
| S105 | S32-2012-05 | LEVER SWITCH | | | |
| S106 | S32-4007-05 | SLIDE SWITCH | | | |
| T001 | L19-0412-05 | CONVERTOR TRANSFORMER | | | |
| TC101 | C05-0422-05 | CAP. TRIMMER | 20P | | |
| U001 | NJM4558D | IC, DUAL OP-AMP | | | |
| U101 | MC10103L | IC, QUAD 2-INPUT OR GATE | | | |
| U102 | SN74LS112N | IC, DUAL J-K FLIP-FLOP | | | |
| U103 | SN74LS02N | IC, QUAD 2-INPUT NOR GATE | | | |
| VR001 | R12-5516-05 | RES. SEMI FIXED | 100K OHM B | | |
| VR101 | R01-3510-05 | V.R. WITH SW. | 10K B | | |
| VR102 | R01-3510-05 | V.R. WITH SW. | 10K B | | |
| VR103 | S02-2506-15 | ROTARY SWITCH | WITH VR.2K,10KB | | |
| VR104 | R12-3520-05 | RES. SEMI FIXED | 10K OHM B | | |
| VR105 | R12-1518-05 | RES. SEMI FIXED | 2K B | | |
| VR106 | R12-0421-05 | RES. SEMI FIXED | 100 B | | |
| VR107 | R12-1517-05 | RES. SEMI FIXED | 1KB | | |
| VR108 | NO USE | | | | |
| VR109 | R12-5518-05 | RES. SEMI FIXED | 200K OHM B | | |
| VR110 | R12-1517-05 | RES. SEMI FIXED | 1KB | | |
| VR111 | R12-0540-05 | RES. SEMI FIXED | 500 B | | |

## HORIZONTAL & HIGH VOLTAGE UNIT

### (X74-1340-02)

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| | E23-0015-04 | EARTH LUG | | | |
| | E23-0046-04 | TERMINAL | | | |
| | E31-2170-05 | JUMPING WIRE | | | |
| | E33-4028-00 | WIRE ASSY | | | |
| | F01-0230-04 | HEAT SINK | | | |
| | F01-0820-04 | HEAT SINK | | | |
| | F01-0835-05 | HEAT SINK | | | |
| | F15-0727-04 | HOLDER (NEON TUBE) | | | |
| | F20-0622-05 | INSULATOR | | | |
| | J25-2998-13 | PCB (UNMOUNTED) | | | |
| | J31-0604-04 | COLLAR | | | |
| | N19-0191-05 | WASHER NONMETAL | | | |
| | N30-3008-46 | SCREW, PAN HD | M 3X8 | | |
| | R92-0150-05 | JUMPING RES. | ZERO OHM | | |
| | W02-0409-05 | HIGH VOLTAGE POWER BLOCK | | | |
| | 002-0001-05 | BRAIDED WIRE | | | |
| | 212-1018-05 | TUBE (PLASTIC) | | | |
| | 212-3013-05 | TUBE (PLASTIC) | | | |
| C001 | CC45CH1H330J | CAP. CERAMIC | 33P | 5% | 50V |
| C002 | CC45CH2H010C | CAP. CERAMIC | 1P | 0.25P | 500V |
| C003 | CK45B2H472K | CAP. CERAMIC | 4700P | 10% | 500V |
| C004 | CE04W1H100M | CAP. ELECTRO | 10 | 20% | 50V |
| C005 | CE04W2E100 | CAP. ELECTRO | 10 | | 250V |
| C006 | CQ93FM1H104K | CAP. MYLAR | 0.1 | 10% | 50V |
| C007 | CQ93FM1H153K | CAP. MYLAR | 0.015 | 10% | 50V |
| C008 | CE04W1V471M | CAP. ELECTRO | 470 | 20% | 35V |
| C009 | CQ93FM1H104K | CAP. MYLAR | 0.1 | 10% | 50V |
| C010 | CQ93FM1H223K | CAP. MYLAR | 0.022 | 10% | 50V |
| C011 | CK45B2H102K | CAP. CERAMIC | 1000P | 10% | 500V |
| C012 | CK45E3F332P | CAP. CERAMIC | 3300P | | 3.1K |
| C013 | CK45E3F332P | CAP. CERAMIC | 3300P | | 3.1K |
| C014 | NO USE | | | | |
| C015 | CE04W2E010 | CAP. ELECTRO | 1 | | 250V |
| C016 | CE04W2E4R7 | CAP. ELECTRO | 4.7 | | 250V |
| C017 | CK45B2H472K | CAP. CERAMIC | 4700P | 10% | 500V |
| C018 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C019 | CC45FCH1H100D | CAP. CERAMIC | 10P | 0.5P | 50V |

# PARTS LIST

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| C020 | CE04W1E101M | CAP. ELECTRO | 100 | 20% | 25V |
| C021 | CK45B2H103K | CAP. CERAMIC | 0.01 | 10% | 500V |
| C022 | CE04W1E101M | CAP. ELECTRO | 100 | 20% | 25V |
| C023 | CE04W1E101M | CAP. ELECTRO | 100 | 20% | 25V |
| C024 | C90-0912-05 | CAP. ELECTRO | 220 | 20% | 35V |
| C025 | C90-0912-05 | CAP. ELECTRO | 220 | 20% | 35V |
| C026 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C027 | CK45B2H472K | CAP. CERAMIC | 4700P | 10% | 500V |
| C028 | CE04W2A3R3M | CAP. ELECTRO | 3.3 | 20% | 100V |
| C029 | C91-0570-05 | CAP. CERAMIC | 4700P | | 3KV |
| C030 | CK45E3F102P | CAP. CERAMIC | 1000P | | 3.1K |
| C031 | CC45CH1H180J | CAP. CERAMIC | 18P | 5% | 50V |
| C101 | CQ93FM1H103K | CAP. MYLAR | 0.01 | 10% | 50V |
| C102 | CQ93FM1H103K | CAP. MYLAR | 0.01 | 10% | 50V |
| C103 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C104 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C105 | CC45CH1H221J | CAP. CERAMIC | 220P | 5% | 50V |
| C106 | CE04W1H100M | CAP. ELECTRO | 10 | 20% | 50V |
| C107 | NO USE | | | | |
| C108 | C90-0298-05 | CAP. CERAMIC | 0.1 | 20% | 12V |
| C109 | CK45B1H472K | CAP. CERAMIC | 4700P | 10% | 50V |
| C110 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C111 | CC45CH1H101J | CAP. CERAMIC | 100P | 5% | 50V |
| C112 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C113 | CC45CH1H101J | CAP. CERAMIC | 100P | 5% | 50V |
| C114 | CE04BW1H010M | CAP. ELECTRO | 1 | 20% | 50V |
| C115 | CE04W1A101M | CAP. ELECTRO | 100 | 20% | 10V |
| C116 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C117 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C118 | CC45CH2H100D | CAP. CERAMIC | 10P | 0.5P | 500V |
| C119 | CC45CH2H100D | CAP. CERAMIC | 10P | 0.5P | 500V |
| C120 | CF93AN2A105J | CAP. POLYESTHEL | 1 | 5% | 100V |
| C121 | CQ93BP2A103F | CAP. MYLAR | 0.01 | 1% | 100V |
| C122 | CM93BD2A900J | CAP. MICA | 90P | 5% | 100V |
| C123 | CQ93FM1H102K | CAP. MYLAR | 1000P | 10% | 50V |
| C124 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C125 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C126 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C127 | NO USE | | | | |
| C128 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C129 | CE04W1H010M | CAP. ELECTRO | 1 | 20% | 50V |
| C130 | NO USE | | | | |
| C131 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C132 | NO USE | | | | |
| C133 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C134 | CC45FCH1H470J | CAP. CERAMIC | 47P | 5% | 50V |
| C135 | CC45CH2H030C | CAP. CERAMIC | 3P | 0.25P | 500V |
| C136 | CM93BD2A151J | CAP. MICA | 150P | 5% | 100V |
| C139 | CC45CH2H020C | CAP. CERAMIC | 2P | 0.25P | 500V |
| C140 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C141 | CK45FB1H102K | CAP. CERAMIC | 1000P | 10% | 50V |
| C142 | CC45CH1H221J | CAP. CERAMIC | 220P | 5% | 50V |
| C143 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C144 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C145 | C90-0298-05 | CAP. CERAMIC | 0.1 | 20% | 12V |
| C146 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C147 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C148 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C149 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C150 | CE04W1E101M | CAP. ELECTRO | 100 | 20% | 25V |
| C151 | CE04W1A221M | CAP. ELECTRO | 220 | 20% | 10V |
| C152 | CE04W1E101M | CAP. ELECTRO | 100 | 20% | 25V |
| C153 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C154 | CE04W2E4R7 | CAP. ELECTRO | 4.7 | | 250V |
| C155 | CK45B2H472K | CAP. CERAMIC | 4700P | 10% | 500V |
| C158 | CC45FCH1H150J | CAP. CERAMIC | 15P | 5% | 50V |
| C159 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C160 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C161 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C162 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C163 | CC45FCH1H100D | CAP. CERAMIC | 10P | 0.5P | 50V |
| C164 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C165 | CC45CH1H151J | CAP. CERAMIC | 150P | 5% | 50V |
| C166 | NO USE | | | | |
| C167 | CC45CH1H221J | CAP. CERAMIC | 220P | 5% | 50V |
| C168 | CE04W1E101M | CAP. ELECTRO | 100 | 20% | 25V |
| C169 | CC45FCH1H050C | CAP. CERAMIC | 5P | 0.25P | 50V |
| C173 | C90-0298-05 | CAP. CERAMIC | 0.1 | 20% | 12V |
| C174 | C90-0298-05 | CAP. CERAMIC | 0.1 | 20% | 12V |
| C175 | NO USE | | | | |
| C176 | CK45B1H152K | CAP. CERAMIC | 1500P | 10% | 50V |
| D001 | DS442X | DIODE, SILICON | SWITCHING | | |
| D002 | DS442X | DIODE, SILICON | SWITCHING | | |
| D003 | NO USE | | | | |
| D004 | W06C | DIODE, SILICON | RECTIFIER | | |
| D005 | W06C | DIODE, SILICON | RECTIFIER | | |
| D006 | 1SS83 | DIODE, SILICON | SWITCHING | | |
| D007 | 1SS83 | DIODE, SILICON | SWITCHING | | |
| D008 | DS442X | DIODE, SILICON | SWITCHING | | |
| D009 | DS442X | DIODE, SILICON | SWITCHING | | |
| D101 | DS442X | DIODE, SILICON | SWITCHING | | |
| D102 | NO USE | | | | |

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| D103 | DS442X | DIODE, SILICON | SWITCHING | | |
| D104 | DS442X | DIODE, SILICON | SWITCHING | | |
| D105 | DS442X | DIODE, SILICON | SWITCHING | | |
| D106 | DS442X | DIODE, SILICON | SWITCHING | | |
| D107 | DS442X | DIODE, SILICON | SWITCHING | | |
| D108 | DS442X | DIODE, SILICON | SWITCHING | | |
| D109 | DS442X | DIODE, SILICON | SWITCHING | | |
| D110 | DS442X | DIODE, SILICON | SWITCHING | | |
| D111 | DS442X | DIODE, SILICON | SWITCHING | | |
| D112 | DS442X | DIODE | | | |
| D113 | DS442X | DIODE | | | |
| D114 | NO USE | | | | |
| D115 | DS442X | DIODE | | | |
| D116 | 1SS83 | DIODE, SILICON | SWITCHING | | |
| D117 | MTZ5.1JB | DIODE, ZENER | 5V | | |
| D121 | DS442X | DIODE, SILICON | SWITCHING | | |
| D122 | NO USE | | | | |
| D123 | 1SS83 | DIODE, SILICON | SWITCHING | | |
| D124 | DS442X | DIODE | | | |
| D125 | DS442X | DIODE | | | |
| L001 | L40-1011-13 | FERRI INDUCTOR | 100UH | | |
| L002 | L40-1011-13 | FERRI INDUCTOR | 100UH | | |
| L003 | L40-1021-03 | FERRI INDUCTOR | | | |
| L004 | L40-1021-13 | FERRI INDUCTOR | | | |
| L005 | L40-1021-13 | FERRI INDUCTOR | | | |
| L006 | L40-1021-13 | FERRI INDUCTOR | | | |
| L007 | L40-1021-13 | FERRI INDUCTOR | | | |
| L008 | L40-4791-02 | FERRI INDUCTOR | 4.7UH | | |
| L101 | L40-1011-13 | FERRI INDUCTOR | 100UH | | |
| NL001 | NE-2B | NEON LAMP | | | |
| NL002 | NE-2B | NEON LAMP | | | |
| P001 | E40-0274-05 | PIN CONNECTOR | 2 P | | |
| P002 | E40-0374-05 | PIN CONNECTOR | 3P | | |
| P003 | E40-0335-05 | PIN CONNECTOR | 3P | | |
| P004 | E40-0535-05 | PIN CONNECTOR | 5P | | |
| P005 | E40-0233-05 | PIN CONNECTOR | 2P | | |
| P101 | E40-1116-05 | PIN CONNECTOR | 11P | | |
| P102 | E40-1116-05 | PIN CONNECTOR | 11P | | |
| P103 | E40-0273-05 | PIN CONNECTOR | 2 P | | |
| Q001 | 2SC2912(S) | TR. SI, NPN | | | |
| Q002 | 2SA1210(S) | TR. SI, PNP | | | |
| Q003 | 2SD613(E) | TR. SI, NPN | | | |
| Q004 | 2SC2785(F) | TR. SI, NPN | | | |
| Q005 | 2SC2271(D) | TR. SI, NPN | | | |
| Q101 | 2SK117(Y) | FET. N-CHANNEL | | | |
| Q102 | 2SK117(Y) | FET. N-CHANNEL | | | |
| Q103 | 2SC2785(F) | TR. SI, NPN | | | |
| Q104 | 2SC2785(F) | TR. SI, NPN | | | |
| Q105 | 2SC2785(F) | TR. SI, NPN | | | |
| Q106 | 2SC2785(F) | TR. SI, NPN | | | |
| Q107 | 2SA1175(F) | TR. SI, PNP | | | |
| Q108 | 2SA1175(F) | TR. SI, PNP | | | |
| Q109 | 2SA1175(F) | TR. SI, PNP | | | |
| Q110 | 2SA1175(F) | TR. SI, PNP | | | |
| Q111 | 2SA1175(F) | TR. SI, PNP | | | |
| Q112 | 2SA1175(F) | TR. SI, PNP | | | |
| Q113 | 2SC2785(F) | TR. SI, NPN | | | |
| Q114 | 2SC2785(F) | TR. SI, NPN | | | |
| Q115 | 2SK117(Y) | FET. N-CHANNEL | | | |
| Q116 | 2SC2785(F) | TR. SI, NPN | | | |
| Q117 | 2SC2785(F) | TR. SI, NPN | | | |
| Q118 | 2SC2785(F) | TR. SI, NPN | | | |
| Q119 | 2SC2785(F) | TR. SI, NPN | | | |
| Q120 | 2SC2785(F) | TR. SI, NPN | | | |
| Q121 | 2SA1175(F) | TR. SI, PNP | | | |
| Q122 | 2SA1175(F) | TR. SI, PNP | | | |
| Q123 | 2SA1175(F) | TR. SI, PNP | | | |
| Q124 | 2SC2912(S) | TR. SI, NPN | | | |
| Q125 | 2SA1210(S) | TR. SI, PNP | | | |
| Q126 | 2SC2785(F) | TR. SI, NPN | | | |
| Q127 | 2SC2912(S) | TR. SI, NPN | | | |
| Q128 | 2SC2785(F) | TR. SI, NPN | | | |
| Q129 | 2SC2785(F) | TR. SI, NPN | | | |
| R001 | RN14BK2E4701F | RES. METAL FILM | 4.7K | 1% | 1/4W |
| R002 | RD14BB2E221J | RES. CARBON | 220 | 5% | 1/4W |
| R003 | RD14BB2E183J | RES. CARBON | 18K | 5% | 1/4W |
| R004 | RD14BB2E104J | RES. CARBON | 100K | 5% | 1/4W |
| R005 | RN14BK2E4702F | RES. METAL FILM | 47K | 1% | 1/4W |
| R006 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R007 | RN14BK2E2403F | RES. METAL FILM | 240K | 1% | 1/4W |
| R008 | RD14BB2E102J | RES. CARBON | 1K | 5% | 1/4W |
| R009 | RD14BB2E104J | RES. CARBON | 100K | 5% | 1/4W |
| R010 | RD14BB2E332J | RES. CARBON | 3.3K | 5% | 1/4W |
| R011 | RD14BB2E221J | RES. CARBON | 220 | 5% | 1/4W |
| R012 | RD14BB2E103J | RES. CARBON | 10K | 5% | 1/4W |
| R013 | R92-1033-05 | RES. FIXED | 33M | | |
| R014 | RD14BB2E334J | RES. CARBON | 330K | 5% | 1/4W |
| R015 | R92-1034-05 | RES. METAL FILM | 47M | | |

# PARTS LIST

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| R016 | R92-1026-05 | RES. METAL FILM | 3.3M | | |
| R017 | R92-1032-05 | RES. FIXED | 22M | | |
| R018 | RD14BB2E473J | RES. CARBON | 47K | 5% | 1/4W |
| R019 | RD14BB2E393J | RES. CARBON | 39K | 5% | 1/4W |
| R020 | RD14BB2E333J | RES. CARBON | 33K | 5% | 1/4W |
| R021 | RD14BB2E473J | RES. CARBON | 47K | 5% | 1/4W |
| R022 | RD14BB2E103J | RES. CARBON | 10K | 5% | 1/4W |
| R023 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R024 | RN14BK2E6800F | RES. METAL FILM | 680 | 1% | 1/4W |
| R025 | RN14BK2E2402F | RES. METAL FILM | 24K | 1% | 1/4W |
| R026 | RN14BK2E1302F | RES. METAL FILM | 13K | 1% | 1/4W |
| R027 | RD14BB2E102J | RES. CARBON | 1K | 5% | 1/4W |
| R028 | RD14BB2E562J | RES. CARBON | 5.6K | 5% | 1/4W |
| R029 | RD14BB2E4R7J | RES. CARBON | 4.7 | 5% | 1/4W |
| R030 | NO USE | | | | |
| R031 | RD14BB2E470J | RES. CARBON | 47 | 5% | 1/4W |
| R032 | RD14BB2E224J | RES. CARBON | 220K | 5% | 1/4W |
| R033 | RD14BB2E563J | RES. CARBON | 56K | 5% | 1/4W |
| R101 | RN14BK2E1004F | RES. METAL FILM | 1M | 1% | 1/4W |
| R102 | RD14BB2E104J | RES. CARBON | 100K | 5% | 1/4W |
| R103 | RD14BB2E153J | RES. CARBON | 15K | 5% | 1/4W |
| R104 | RD14BB2E153J | RES. CARBON | 15K | 5% | 1/4W |
| R105 | RD14BB2E201J | RES. CARBON | 200 | 5% | 1/4W |
| R106 | RD14BB2E302J | RES. CARBON | 3K | 5% | 1/4W |
| R107 | RN14BK2E3301F | RES. METAL FILM | 3.3K | 1% | 1/4W |
| R108 | RN14BK2E3300F | RES. METAL FILM | 330 | 1% | 1/4W |
| R109 | RN14BK2E3600F | RES. METAL FILM | 360 | 1% | 1/4W |
| R110 | RN14BK2E4701F | RES. METAL FILM | 4.7K | 1% | 1/4W |
| R111 | RN14BK2E5101F | RES. METAL FILM | 5.1K | 1% | 1/4W |
| R112 | RD14BB2E103J | RES. CARBON | 10K | 5% | 1/4W |
| R113 | RD14BB2E183J | RES. CARBON | 18K | 5% | 1/4W |
| R114 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R115 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R116 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R117 | RD14BB2E472J | RES. CARBON | 4.7K | 5% | 1/4W |
| R118 | RD14BB2E105J | RES. CARBON | 1M | 5% | 1/4W |
| R119 | RD14BB2E622J | RES. CARBON | 6.2K | 5% | 1/4W |
| R120 | RD14BB2E102J | RES. CARBON | 1K | 5% | 1/4W |
| R121 | RD14BB2E472J | RES. CARBON | 4.7K | 5% | 1/4W |
| R122 | RN14BK2E2701F | RES. METAL FILM | 2.7K | 1% | 1/4W |
| R123 | RN14BK2E3600F | RES. METAL FILM | 360 | 1% | 1/4W |
| R124 | RN14BK2E3600F | RES. METAL FILM | 360 | 1% | 1/4W |
| R125 | RD14BB2E102J | RES. CARBON | 1K | 5% | 1/4W |
| R126 | RN14BK2E1002F | RES. METAL FILM | 10K | 1% | 1/4W |
| R127 | RN14BK2E2701F | RES. METAL FILM | 2.7K | 1% | 1/4W |
| R128 | RD14BB2E102J | RES. CARBON | 1K | 5% | 1/4W |
| R129 | RD14BB2E561J | RES. CARBON | 560 | 5% | 1/4W |
| R130 | RD14BB2E182J | RES. CARBON | 1.8K | 5% | 1/4W |
| R131 | RD14BB2E681J | RES. CARBON | 680 | 5% | 1/4W |
| R132 | RD14BB2E472J | RES. CARBON | 4.7K | 5% | 1/4W |
| R133 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R134 | RD14BB2E102J | RES. CARBON | 1K | 5% | 1/4W |
| R135 | RD14BB2E472J | RES. CARBON | 4.7K | 5% | 1/4W |
| R136 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R137 | RD14BB2E102J | RES. CARBON | 1K | 5% | 1/4W |
| R138 | RD14BB2E102J | RES. CARBON | 1K | 5% | 1/4W |
| R139 | RD14BB2E562J | RES. CARBON | 5.6K | 5% | 1/4W |
| R140 | RD14BB2E221J | RES. CARBON | 220 | 5% | 1/4W |
| R141 | RD14BB2E221J | RES. CARBON | 220 | 5% | 1/4W |
| R142 | RD14BB2C220J | RES. CARBON | 22 | 5% | 1/6W |
| R143 | RD14BB2E472J | RES. CARBON | 4.7K | 5% | 1/4W |
| R144 | RD14BB2E103J | RES. CARBON | 10K | 5% | 1/4W |
| R145 | RD14BB2E182J | RES. CARBON | 1.8K | 5% | 1/4W |
| R146 | RD14BB2E472J | RES. CARBON | 4.7K | 5% | 1/4W |
| R147 | RN14BK2E3302F | RES. METAL FILM | 33K | 1% | 1/4W |
| R148 | RD14BB2E102J | RES. CARBON | 1K | 5% | 1/4W |
| R149 | RN14BK2E3602F | RES. METAL FILM | 36K | 1% | 1/4W |
| R150 | RS14GB3D183J | RES. METAL FILM | 18K | 5% | 2W |
| R151 | RD14BB2E102J | RES. CARBON | 1K | 5% | 1/4W |
| R152 | RD14BB2E153J | RES. CARBON | 15K | 5% | 1/4W |
| R153 | RD14BB2E153J | RES. CARBON | 15K | 5% | 1/4W |
| R154 | RD14BB2E133J | RES. CARBON | 13K | 5% | 1/4W |
| R155 | RD14BB2C132J | RES. CARBON | 1.3K | 5% | 1/6W |
| R156 | RN14BK2E1201F | RES. METAL FILM | 1.2K | 1% | 1/4W |
| R157 | RN14BK2E1201F | RES. METAL FILM | 1.2K | 1% | 1/4W |
| R158 | RN14BK2E4301F | RES. METAL FILM | 4.3K | 1% | 1/4W |
| R159 | RN14BK2E9101F | RES. METAL FILM | 9.1K | 1% | 1/4W |
| R160 | RN14BK2E3004F | RES. METAL FILM | 3M | 1% | 1/4W |
| R161 | RN14BK2E1004F | RES. METAL FILM | 1M | 1% | 1/4W |
| R162 | RN14BK2E5003F | RES. METAL FILM | 500K | 1% | 1/4W |
| R163 | RN14BK2E3003F | RES. METAL FILM | 300K | 1% | 1/4W |
| R164 | RN14BK2E1003F | RES. METAL FILM | 100K | 1% | 1/4W |
| R165 | RN14BK2E5002F | RES. METAL FILM | 50K | 1% | 1/4W |
| R166 | RN14BK2E3002F | RES. METAL FILM | 30K | 1% | 1/4W |
| R167 | RN14BK2E2002F | RES. METAL FILM | 20K | 1% | 1/4W |
| R168 | RD14BB2E472J | RES. CARBON | 4.7K | 5% | 1/4W |
| R169 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R170 | RD14BB2E472J | RES. CARBON | 4.7K | 5% | 1/4W |
| R171 | RN14BK2E4701F | RES. METAL FILM | 4.7K | 1% | 1/4W |
| R172 | RD14BB2E472J | RES. CARBON | 4.7K | 5% | 1/4W |
| R173 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R174 | RD14BB2E391J | RES. CARBON | 390 | 5% | 1/4W |
| R175 | RN14BK2E2201F | RES. METAL FILM | 2.2K | 1% | 1/4W |
| R176 | RN14BK2E2201F | RES. METAL FILM | 2.2K | 1% | 1/4W |
| R177 | RD14BB2E182J | RES. CARBON | 1.8K | 5% | 1/4W |
| R178 | RD14BB2E182J | RES. CARBON | 1.8K | 5% | 1/4W |

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| R179 | RD14BB2E103J | RES. CARBON | 10K | 5% | 1/4W |
| R180 | RN14BK2E1202F | RES. METAL FILM | 12K | 1% | 1/4W |
| R181 | RD14BB2E822J | RES. CARBON | 8.2K | 5% | 1/4W |
| R182 | RD14BB2E103J | RES. CARBON | 10K | 5% | 1/4W |
| R183 | RD14BB2E124J | RES. CARBON | 120K | 5% | 1/4W |
| R184 | RD14BB2E621J | RES. CARBON | 620 | 5% | 1/4W |
| R185 | RD14BB2E102J | RES. CARBON | 1K | 5% | 1/4W |
| R186 | RD14BB2E473J | RES. CARBON | 47K | 5% | 1/4W |
| R187 | RD14BB2E203J | RES. CARBON | 20K | 5% | 1/4W |
| R188 | RD14BB2E103J | RES. CARBON | 10K | 5% | 1/4W |
| R189 | RD14BB2E102J | RES. CARBON | 1K | 5% | 1/4W |
| R190 | RS14GB3D103J | RES. METAL FILM | 10K | 5% | 2W |
| R191 | RD14BB2E124J | RES. CARBON | 120K | 5% | 1/4W |
| R192 | RD14BB2E103J | RES. CARBON | 10K | 5% | 1/4W |
| R193 | RD14BB2E122J | RES. CARBON | 1.2K | 5% | 1/4W |
| R194 | RD14BB2E122J | RES. CARBON | 1.2K | 5% | 1/4W |
| R195 | RD14BB2E821J | RES. CARBON | 820 | 5% | 1/4W |
| R196 | RD14BB2E821J | RES. CARBON | 820 | 5% | 1/4W |
| R197 | NO USE | | | | |
| R198 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R199 | RD14BB2E221J | RES. CARBON | 220 | 5% | 1/4W |
| R205 | RD14BB2E102J | RES. CARBON | 1K | 5% | 1/4W |
| R206 | NO USE | | | | |
| R207 | RN14BK2E9101F | RES. METAL FILM | 9.1K | 1% | 1/4W |
| R210 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R211 | RD14BB2E470J | RES. CARBON | 47 | 5% | 1/4W |
| R212 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R213 | RD14BB2E152J | RES. CARBON | 1.5K | 5% | 1/4W |
| R214 | RN14BK2E5101F | RES. METAL FILM | 5.1K | 1% | 1/4W |
| R217 | RD14BB2E562J | RES. CARBON | 5.6K | 5% | 1/4W |
| R221 | RD14BB2E133J | RES. CARBON | 13K | 5% | 1/4W |
| R222 | RD14BB2C102J | RES. CARBON | 1K | 5% | 1/6W |
| R223 | RD14BB2E103J | RES. CARBON | 10K | 5% | 1/4W |
| R224 | NO USE | | | | |
| R225 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R226 | NO USE | | | | |
| R227 | RD14BB2C10ZJ | RES. CARBON | 1K | 5% | 1/6W |
| R228 | RD14BB2C133J | RES. CARBON | 13K | 5% | 1/6W |
| S101 | R01-3510-05 | V.R. WITH SW. | 10K B | | |
| S102 | R01-3510-05 | V.R. WITH SW. | 10K B | | |
| S103 | S02-2507-15 | ROTARY SWITCH | WITH VR.2KB | | |
| S104 | S33-2501-05 | LEVER SWITCH | | | |
| S105 | S32-2012-05 | LEVER SWITCH | | | |
| S106 | S32-4007-05 | SLIDE SWITCH | | | |
| T001 | L19-0413-05 | CONVERTOR TRANSFORMER | | | |
| TC101 | C05-0422-05 | CAP. TRIMMER | 20P | | |
| TC102 | C05-0420-05 | CAP. TRIMMER | 6P | | |
| U001 | NJM4558D | IC | | | |
| U101 | MC10103L | IC, QUAD 2-INPUT OR GATE | | | |
| U102 | SN74LS112N | IC | | | |
| U103 | SN74LS02N | IC, QUAD 2-INPUT NOR GATE | | | |
| U104 | SN74LS00N | IC | | | |
| U105 | SN74LS08N | IC, QUAD 2-INPUT AND GATE | | | |
| VR001 | R12-5516-05 | RES. SEMI FIXED 100K B | | | |
| VR101 | R01-3510-05 | V.R. WITH SW. | 10K B | | |
| VR102 | R01-3510-05 | V.R. WITH SW. | 10K B | | |
| VR103 | S02-2507-15 | ROTARY SWITCH | WITH VR.2KB | | |
| VR104 | R12-3520-05 | RES. SEMI FIXED | 10K B | | |
| VR105 | R12-1518-05 | RES. SEMI FIXED | 2K B | | |
| VR106 | R12-0421-05 | RES. SEMI FIXED | 100 B | | |
| VR107 | R12-1517-05 | RES. SEMI FIXED | 1K B | | |
| VR108 | NO USE | | | | |
| VR109 | R12-5518-05 | RES. SEMI FIXED 200K OHM B | | | |
| VR110 | NO USE | | | | |
| VR111 | R12-0540-05 | RES. SEMI FIXED 500 B | | | |

## HORIZONTAL & HIGH VOLTAGE UNIT

### (X74-1340-03)

| REF.NO | PARTS NO | NAME & DESCRIPTION |
|---|---|---|
| | E23-0015-04 | EARTH LUG |
| | E23-0046-04 | TERMINAL |
| | E31-2170-05 | JUMPING WIRE |
| | E33-4029-00 | WIRE ASSY |
| | F01-0230-04 | HEAT SINK |
| | F01-0820-04 | HEAT SINK |
| | F01-0835-05 | HEAT SINK |
| | F15-0727-04 | HOLDER (NEON TUBE) |
| | F20-0622-05 | INSULATOR |
| | J25-2998-13 | PCB (UNMOUNTED) |
| | J31-0604-04 | COLLAR |
| | N19-0191-05 | WASHER NONMETAL |
| | N30-3008-46 | SCREW, PAN HD M 3X8 |

# PARTS LIST

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| | R92-0150-05 | JUMPING RES. | ZERO OHM | | |
| | W02-0409-05 | HIGH VOLTAGE POWER BLOCK | | | |
| | 002-0001-05 | BRAIDED WIRE | | | |
| | 212-1018-05 | TUBE (PLASTIC) | | | |
| | 212-3013-05 | TUBE (PLASTIC) | | | |
| C001 | CC45CH1H330J | CAP. CERAMIC | 33P | 5% | 50V |
| C002 | CC45CH2H010C | CAP. CERAMIC | 1P | 0.25P | 500V |
| C003 | CK45B2H472K | CAP. CERAMIC | 4700P | 10% | 500V |
| C004 | CE04W1H100M | CAP. ELECTRO | 10 | 20% | 50V |
| C005 | CE04W2E100 | CAP. ELECTRO | 10 | | 250V |
| C006 | CQ93FM1H104K | CAP. MYLAR | 0.1 | 10% | 50V |
| C007 | CQ93FM1H153K | CAP. MYLAR | 0.015 | 10% | 50V |
| C008 | CE04W1V471M | CAP. ELECTRO | 470 | 20% | 35V |
| C009 | CQ93FM1H104K | CAP. MYLAR | 0.1 | 10% | 50V |
| C010 | CQ93FM1H223K | CAP. MYLAR | 0.022 | 10% | 50V |
| C011 | CK45B2H102K | CAP. CERAMIC | 1000P | 10% | 500V |
| C012 | CK45E3F332P | CAP. CERAMIC | 3300P | | 3.1K |
| C013 | CK45E3F332P | CAP. CERAMIC | 3300P | | 3.1K |
| C014 | NO USE | | | | |
| C015 | CE04W2E010 | CAP. ELECTRO | 1 | | 250V |
| C016 | CE04W2E4R7 | CAP. ELECTRO | 4.7 | | 250V |
| C017 | CK45B2H472K | CAP. CERAMIC | 4700P | 10% | 500V |
| C018 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C019 | CC45FCH1H100D | CAP. CERAMIC | 10P | 0.5P | 50V |
| C020 | CE04W1E101M | CAP. ELECTRO | 100 | 20% | 25V |
| C021 | CK45B2H103K | CAP. CERAMIC | 0.01 | 10% | 500V |
| C022 | CE04W1E101M | CAP. ELECTRO | 100 | 20% | 25V |
| C023 | CE04W1E101M | CAP. ELECTRO | 100 | 20% | 25V |
| C024 | C90-0912-05 | CAP. ELECTRO | 220 | 20% | 35V |
| C025 | C90-0912-05 | CAP. ELECTRO | 220 | 20% | 35V |
| C026 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C027 | CK45B2H472K | CAP. CERAMIC | 4700P | 10% | 500V |
| C028 | CE04W2A3R3M | CAP. ELECTRO | 3.3 | 20% | 100V |
| C029 | C91-0570-05 | CAP. CERAMIC | 4700P | | 3KV |
| C030 | CK45E3F102P | CAP. CERAMIC | 1000P | | 3.1K |
| C031 | CC45CH1H180J | CAP. CERAMIC | 18P | 5% | 50V |
| C101 | CQ93FM1H103K | CAP. MYLAR | 0.01 | 10% | 50V |
| C102 | CQ93FM1H103K | CAP. MYLAR | 0.01 | 10% | 50V |
| C103 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C104 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C105 | CC45CH1H221J | CAP. CERAMIC | 220P | 5% | 50V |
| C106 | CE04W1H100M | CAP. ELECTRO | 10 | 20% | 50V |
| C107 | NO USE | | | | |
| C108 | C90-0298-05 | CAP. CERAMIC | 0.1 | 20% | 12V |
| C109 | CK45B1H472K | CAP. CERAMIC | 4700P | 10% | 50V |
| C110 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C111 | CC45CH1H101J | CAP. CERAMIC | 100P | 5% | 50V |
| C112 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C113 | CC45CH1H101J | CAP. CERAMIC | 100P | 5% | 50V |
| C114 | CE04BW1H010M | CAP. ELECTRO | 1 | 20% | 50V |
| C115 | CE04W1A101M | CAP. ELECTRO | 100 | 20% | 10V |
| C116 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C117 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C118 | CC45CH2H100D | CAP. CERAMIC | 10P | 0.5P | 500V |
| C119 | CC45CH2H100D | CAP. CERAMIC | 10P | 0.5P | 500V |
| C120 | CF93AN2A105J | CAP. POLYESTHEL | 1 | 5% | 100V |
| C121 | CQ93BP2A103F | CAP. MYLAR | 0.01 | 1% | 100V |
| C122 | CM93BD2A900J | CAP. MICA | 90P | 5% | 100V |
| C123 | CQ93FM1H102K | CAP. MYLAR | 1000P | 10% | 50V |
| C124 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C125 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C126 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C127 | NO USE | | | | |
| C128 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C129 | CE04W1H010M | CAP. ELECTRO | 1 | 20% | 50V |
| C130 | NO USE | | | | |
| C131 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C132 | NO USE | | | | |
| C133 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C134 | CC45FCH1H470J | CAP. CERAMIC | 47P | 5% | 50V |
| C135 | CC45CH2H030C | CAP. CERAMIC | 3P | 0.25P | 500V |
| C136 | CM93BD2A151J | CAP. MICA | 150P | 5% | 100V |
| C139 | CC45CH2H020C | CAP. CERAMIC | 2P | 0.25P | 500V |
| C140 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C143 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C144 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C145 | C90-0298-05 | CAP. CERAMIC | 0.1 | 20% | 12V |
| C146 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C147 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C148 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C149 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C150 | CE04W1E101M | CAP. ELECTRO | 100 | 20% | 25V |
| C151 | CE04W1A221M | CAP. ELECTRO | 220 | 20% | 10V |
| C152 | CE04W1E101M | CAP. ELECTRO | 100 | 20% | 25V |
| C153 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C154 | CE04W2E4R7 | CAP. ELECTRO | 4.7 | | 250V |
| C155 | CK45B2H472K | CAP. CERAMIC | 4700P | 10% | 500V |
| C156 | NO USE | | | | |
| C157 | CQ93FM1H103K | CAP. MYLAR | 0.01 | 10% | 50V |
| C158 | CC45FCH1H150J | CAP. CERAMIC | 15P | 5% | 50V |
| C159 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C160 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C161 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C162 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| C163 | CC45FCH1H100D | CAP. CERAMIC | 10P | 0.5P | 50V |
| C164 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C165 | CC45CH1H151J | CAP. CERAMIC | 150P | 5% | 50V |
| C166 | CC45FCH1H100D | CAP. CERAMIC | 10P | 0.5P | 50V |
| C167 | CC45CH1H221J | CAP. CERAMIC | 220P | 5% | 50V |
| C168 | CE04W1E101M | CAP. ELECTRO | 100 | 20% | 25V |
| C169 | CC45FCH1H050C | CAP. CERAMIC | 5P | 0.25P | 50V |
| C173 | C90-0298-05 | CAP. CERAMIC | 0.1 | 20% | 12V |
| C174 | C90-0298-05 | CAP. CERAMIC | 0.1 | 20% | 12V |
| C175 | NO USE | | | | |
| C176 | CK45B1H152K | CAP. CERAMIC | 1500P | 10% | 50V |
| D001 | DS442X | DIODE, SILICON | SWITCHING | | |
| D002 | DS442X | DIODE, SILICON | SWITCHING | | |
| D003 | NO USE | | | | |
| D004 | W06C | DIODE, SILICON | RECTIFIER | | |
| D005 | W06C | DIODE, SILICON | RECTIFIER | | |
| D006 | 1SS83 | DIODE, SILICON | SWITCHING | | |
| D007 | 1SS83 | DIODE, SILICON | SWITCHING | | |
| D008 | DS442X | DIODE, SILICON | SWITCHING | | |
| D009 | DS442X | DIODE, SILICON | SWITCHING | | |
| D101 | DS442X | DIODE, SILICON | SWITCHING | | |
| D102 | NO USE | | | | |
| D103 | DS442X | DIODE, SILICON | SWITCHING | | |
| D104 | DS442X | DIODE, SILICON | SWITCHING | | |
| D105 | DS442X | DIODE, SILICON | SWITCHING | | |
| D106 | DS442X | DIODE, SILICON | SWITCHING | | |
| D107 | DS442X | DIODE, SILICON | SWITCHING | | |
| D108 | DS442X | DIODE, SILICON | SWITCHING | | |
| D109 | DS442X | DIODE, SILICON | SWITCHING | | |
| D110 | DS442X | DIODE, SILICON | SWITCHING | | |
| D111 | DS442X | DIODE, SILICON | SWITCHING | | |
| D116 | 1SS83 | DIODE, SILICON | SWITCHING | | |
| D117 | MTZ5.1JB | DIODE, ZENER | 5V | | |
| D118 | DS442X | DIODE | | | |
| D119 | NO USE | | | | |
| D120 | DS442X | DIODE | | | |
| D121 | DS442X | DIODE, SILICON | SWITCHING | | |
| D122 | NO USE | | | | |
| D123 | 1SS83 | DIODE, SILICON | SWITCHING | | |
| D124 | DS442X | DIODE | | | |
| D125 | DS442X | DIODE | | | |
| L001 | L40-1011-13 | FERRI INDUCTOR | 100UH | | |
| L002 | L40-1011-13 | FERRI INDUCTOR | 100UH | | |
| L003 | L40-1021-03 | FERRI INDUCTOR | | | |
| L004 | L40-1021-13 | FERRI INDUCTOR | | | |
| L005 | L40-1021-13 | FERRI INDUCTOR | | | |
| L006 | L40-1021-13 | FERRI INDUCTOR | | | |
| L007 | L40-1021-13 | FERRI INDUCTOR | | | |
| L008 | L40-4791-02 | FERRI INDUCTOR | 4.7UH | | |
| L101 | L40-1011-13 | FERRI INDUCTOR | 100UH | | |
| NL001 | NE-2B | NEON LAMP | | | |
| NL002 | NE-2B | NEON LAMP | | | |
| P001 | E40-0274-05 | PIN CONNECTOR | 2 P | | |
| P002 | E40-0374-05 | PIN CONNECTOR | 3P | | |
| P003 | E40-0335-05 | PIN CONNECTOR | 3P | | |
| P004 | E40-0535-05 | PIN CONNECTOR | 5P | | |
| P005 | E40-0233-05 | PIN CONNECTOR | 2P | | |
| P101 | E40-1116-05 | PIN CONNECTOR | 11P | | |
| P102 | E40-1116-05 | PIN CONNECTOR | 11P | | |
| P103 | E40-0273-05 | PIN CONNECTOR | 2 P | | |
| Q001 | 2SC2912(S) | TR. SI, NPN | | | |
| Q002 | 2SA1210(S) | TR. SI, PNP | | | |
| Q003 | 2SD613(E) | TR. SI, NPN | | | |
| Q004 | 2SC2785(F) | TR. SI, NPN | | | |
| Q005 | 2SC2271(D) | TR. SI, NPN | | | |
| Q101 | 2SK117(Y) | FET. N-CHANNEL | | | |
| Q102 | 2SK117(Y) | FET. N-CHANNEL | | | |
| Q103 | 2SC2785(F) | TR. SI, NPN | | | |
| Q104 | 2SC2785(F) | TR. SI, NPN | | | |
| Q105 | 2SC2785(F) | TR. SI, NPN | | | |
| Q106 | 2SC2785(F) | TR. SI, NPN | | | |
| Q107 | 2SA1175(F) | TR. SI, PNP | | | |
| Q108 | 2SA1175(F) | TR. SI, PNP | | | |
| Q109 | 2SA1175(F) | TR. SI, PNP | | | |
| Q110 | 2SA1175(F) | TR. SI, PNP | | | |
| Q111 | 2SA1175(F) | TR. SI, PNP | | | |
| Q112 | 2SA1175(F) | TR. SI, PNP | | | |
| Q113 | 2SC2785(F) | TR. SI, NPN | | | |
| Q114 | 2SC2785(F) | TR. SI, NPN | | | |
| Q115 | 2SK117(Y) | FET. N-CHANNEL | | | |
| Q116 | 2SC2785(F) | TR. SI, NPN | | | |
| Q117 | 2SC2785(F) | TR. SI, NPN | | | |
| Q118 | 2SC2785(F) | TR. SI, NPN | | | |
| Q119 | 2SC2785(F) | TR. SI, NPN | | | |
| Q120 | 2SC2785(F) | TR. SI, NPN | | | |
| Q121 | 2SA1175(F) | TR. SI, PNP | | | |

# PARTS LIST

| REF.NO | PARTS NO | NAME & DESCRIPTION |
|---|---|---|
| Q122 | 2SA1175(F) | TR. SI, PNP |
| Q123 | 2SA1175(F) | TR. SI, PNP |
| Q124 | 2SC2912(S) | TR. SI, NPN |
| Q125 | 2SA1210(S) | TR. SI, PNP |
| Q126 | 2SC2785(F) | TR. SI, NPN |
| Q127 | 2SC2912(S) | TR. SI, NPN |
| Q128 | 2SC2785(F) | TR. SI, NPN |
| Q129 | 2SC2785(F) | TR. SI, NPN |
| Q130 | 2SK117(Y) | FET. N-CHANNEL |
| Q131 | 2SA1175(F) | TR. SI, PNP |
| R001 | RN14BK2E4701F | RES. METAL FILM 4.7K 1% 1/4W |
| R002 | RD14BB2E221J | RES. CARBON 220 5% 1/4W |
| R003 | RD14BB2E183J | RES. CARBON 18K 5% 1/4W |
| R004 | RD14BB2E104J | RES. CARBON 100K 5% 1/4W |
| R005 | RN14BK2E4702F | RES. METAL FILM 47K 1% 1/4W |
| R006 | RD14BB2E101J | RES. CARBON 100 5% 1/4W |
| R007 | RN14BK2E2403F | RES. METAL FILM 240K 1% 1/4W |
| R008 | RD14BB2E102J | RES. CARBON 1K 5% 1/4W |
| R009 | RD14BB2E104J | RES. CARBON 100K 5% 1/4W |
| R010 | RD14BB2E332J | RES. CARBON 3.3K 5% 1/4W |
| R011 | RD14BB2E221J | RES. CARBON 220 5% 1/4W |
| R012 | RD14BB2E103J | RES. CARBON 10K 5% 1/4W |
| R013 | R92-1033-05 | RES. FIXED 33M |
| R014 | RD14BB2E334J | RES. CARBON 330K 5% 1/4W |
| R015 | R92-1034-05 | RES. METAL FILM 47M |
| R016 | R92-1026-05 | RES. METAL FILM 3.3M |
| R017 | R92-1032-05 | RES. FIXED 22M |
| R018 | RD14BB2E473J | RES. CARBON 47K 5% 1/4W |
| R019 | RD14BB2E393J | RES. CARBON 39K 5% 1/4W |
| R020 | RD14BB2E333J | RES. CARBON 33K 5% 1/4W |
| R021 | RD14BB2E473J | RES. CARBON 47K 5% 1/4W |
| R022 | RD14BB2E103J | RES. CARBON 10K 5% 1/4W |
| R023 | RD14BB2E222J | RES. CARBON 2.2K 5% 1/4W |
| R024 | RN14BK2E6800F | RES. METAL FILM 680 1% 1/4W |
| R025 | RN14BK2E2402F | RES. METAL FILM 24K 1% 1/4W |
| R026 | RN14BK2E1302F | RES. METAL FILM 13K 1% 1/4W |
| R027 | RD14BB2E102J | RES. CARBON 1K 5% 1/4W |
| R028 | RD14BB2E562J | RES. CARBON 5.6K 5% 1/4W |
| R029 | RD14BB2E4R7J | RES. CARBON 4.7 5% 1/4W |
| R030 | NO USE | |
| R031 | RD14BB2E470J | RES. CARBON 47 5% 1/4W |
| R032 | RD14BB2E224J | RES. CARBON 220K 5% 1/4W |
| R033 | RD14BB2E563J | RES. CARBON 56K 5% 1/4W |
| R101 | RN14BK2E1004F | RES. METAL FILM 1M 1% 1/4W |
| R102 | RD14BB2E104J | RES. CARBON 100K 5% 1/4W |
| R103 | RD14BB2E153J | RES. CARBON 15K 5% 1/4W |
| R104 | RD14BB2E153J | RES. CARBON 15K 5% 1/4W |
| R105 | RD14BB2E201J | RES. CARBON 200 5% 1/4W |
| R106 | RD14BB2E302J | RES. CARBON 3K 5% 1/4W |
| R107 | RN14BK2E3301F | RES. METAL FILM 3.3K 1% 1/4W |
| R108 | RN14BK2E3300F | RES. METAL FILM 330 1% 1/4W |
| R109 | RN14BK2E3600F | RES. METAL FILM 360 1% 1/4W |
| R110 | RN14BK2E4701F | RES. METAL FILM 4.7K 1% 1/4W |
| R111 | RN14BK2E5101F | RES. METAL FILM 5.1K 1% 1/4W |
| R112 | RD14BB2E103J | RES. CARBON 10K 5% 1/4W |
| R113 | RD14BB2E183J | RES. CARBON 18K 5% 1/4W |
| R114 | RD14BB2E222J | RES. CARBON 2.2K 5% 1/4W |
| R115 | RD14BB2E222J | RES. CARBON 2.2K 5% 1/4W |
| R116 | RD14BB2E222J | RES. CARBON 2.2K 5% 1/4W |
| R117 | RD14BB2E472J | RES. CARBON 4.7K 5% 1/4W |
| R118 | RD14BB2E105J | RES. CARBON 1M 5% 1/4W |
| R119 | RD14BB2E622J | RES. CARBON 6.2K 5% 1/4W |
| R120 | RD14BB2E102J | RES. CARBON 1K 5% 1/4W |
| R121 | RD14BB2E472J | RES. CARBON 4.7K 5% 1/4W |
| R122 | RN14BK2E2701F | RES. METAL FILM 2.7K 1% 1/4W |
| R123 | RN14BK2E3600F | RES. METAL FILM 360 1% 1/4W |
| R124 | RN14BK2E3600F | RES. METAL FILM 360 1% 1/4W |
| R125 | RD14BB2E102J | RES. CARBON 1K 5% 1/4W |
| R126 | RN14BK2E1002F | RES. METAL FILM 10K 1% 1/4W |
| R127 | RN14BK2E2701F | RES. METAL FILM 2.7K 1% 1/4W |
| R128 | RD14BB2E102J | RES. CARBON 1K 5% 1/4W |
| R129 | RD14BB2E561J | RES. CARBON 560 5% 1/4W |
| R130 | RD14BB2E182J | RES. CARBON 1.8K 5% 1/4W |
| R131 | RD14BB2E681J | RES. CARBON 680 5% 1/4W |
| R132 | RD14BB2E472J | RES. CARBON 4.7K 5% 1/4W |
| R133 | RD14BB2E222J | RES. CARBON 2.2K 5% 1/4W |
| R134 | RD14BB2E102J | RES. CARBON 1K 5% 1/4W |
| R135 | RD14BB2E472J | RES. CARBON 4.7K 5% 1/4W |
| R136 | RD14BB2E222J | RES. CARBON 2.2K 5% 1/4W |
| R137 | RD14BB2E102J | RES. CARBON 1K 5% 1/4W |
| R138 | RD14BB2E102J | RES. CARBON 1K 5% 1/4W |
| R139 | RD14BB2E562J | RES. CARBON 5.6K 5% 1/4W |
| R140 | RD14BB2E221J | RES. CARBON 220 5% 1/4W |
| R141 | RD14BB2E221J | RES. CARBON 220 5% 1/4W |
| R142 | RD14BB2C220J | RES. CARBON 22 5% 1/6W |
| R143 | RD14BB2E472J | RES. CARBON 4.7K 5% 1/4W |
| R144 | RD14BB2E103J | RES. CARBON 10K 5% 1/4W |
| R145 | RD14BB2E182J | RES. CARBON 1.8K 5% 1/4W |
| R146 | RD14BB2E472J | RES. CARBON 4.7K 5% 1/4W |
| R147 | RN14BK2E3302F | RES. METAL FILM 33K 1% 1/4W |
| R148 | RD14BB2E102J | RES. CARBON 1K 5% 1/4W |
| R149 | RN14BK2E3602F | RES. METAL FILM 36K 1% 1/4W |
| R150 | RS14GB3D183J | RES. METAL FILM 18K 5% 2W |
| R151 | RD14BB2E102J | RES. CARBON 1K 5% 1/4W |
| R152 | RD14BB2E153J | RES. CARBON 15K 5% 1/4W |

| REF.NO | PARTS NO | NAME & DESCRIPTION |
|---|---|---|
| R153 | RD14BB2E153J | RES. CARBON 15K 5% 1/4W |
| R154 | RD14BB2E133J | RES. CARBON 13K 5% 1/4W |
| R155 | RD14BB2C152J | RES. CARBON 1.5K 5% 1/6W |
| R156 | RN14BK2E1201F | RES. METAL FILM 1.2K 1% 1/4W |
| R157 | RN14BK2E1201F | RES. METAL FILM 1.2K 1% 1/4W |
| R158 | RN14BK2E6801F | RES. METAL FILM 6.8K 1% 1/4W |
| R159 | RN14BK2E9101F | RES. METAL FILM 9.1K 1% 1/4W |
| R160 | RN14BK2E3004F | RES. METAL FILM 3M 1% 1/4W |
| R161 | RN14BK2E1004F | RES. METAL FILM 1M 1% 1/4W |
| R162 | RN14BK2E5003F | RES. METAL FILM 500K 1% 1/4W |
| R163 | RN14BK2E3003F | RES. METAL FILM 300K 1% 1/4W |
| R164 | RN14BK2E1003F | RES. METAL FILM 100K 1% 1/4W |
| R165 | RN14BK2E5002F | RES. METAL FILM 50K 1% 1/4W |
| R166 | RN14BK2E3002F | RES. METAL FILM 30K 1% 1/4W |
| R167 | RN14BK2E2002F | RES. METAL FILM 20K 1% 1/4W |
| R168 | RD14BB2E472J | RES. CARBON 4.7K 5% 1/4W |
| R169 | RD14BB2E222J | RES. CARBON 2.2K 5% 1/4W |
| R170 | RD14BB2E472J | RES. CARBON 4.7K 5% 1/4W |
| R171 | RN14BK2E4701F | RES. METAL FILM 4.7K 1% 1/4W |
| R172 | RD14BB2E472J | RES. CARBON 4.7K 5% 1/4W |
| R173 | RD14BB2E101J | RES. CARBON 100 5% 1/4W |
| R174 | RD14BB2E391J | RES. CARBON 390 5% 1/4W |
| R175 | RN14BK2E2201F | RES. METAL FILM 2.2K 1% 1/4W |
| R176 | RN14BK2E2201F | RES. METAL FILM 2.2K 1% 1/4W |
| R177 | RD14BB2E182J | RES. CARBON 1.8K 5% 1/4W |
| R178 | RD14BB2E182J | RES. CARBON 1.8K 5% 1/4W |
| R179 | RD14BB2E103J | RES. CARBON 10K 5% 1/4W |
| R180 | RN14BK2E1202F | RES. METAL FILM 12K 1% 1/4W |
| R181 | RD14BB2E822J | RES. CARBON 8.2K 5% 1/4W |
| R182 | RD14BB2E103J | RES. CARBON 10K 5% 1/4W |
| R183 | RD14BB2E124J | RES. CARBON 120K 5% 1/4W |
| R184 | RD14BB2E621J | RES. CARBON 620 5% 1/4W |
| R185 | RD14BB2E102J | RES. CARBON 1K 5% 1/4W |
| R186 | RD14BB2E473J | RES. CARBON 47K 5% 1/4W |
| R187 | RD14BB2E203J | RES. CARBON 20K 5% 1/4W |
| R188 | RD14BB2E103J | RES. CARBON 10K 5% 1/4W |
| R189 | RD14BB2E102J | RES. CARBON 1K 5% 1/4W |
| R190 | RS14GB3D103J | RES. METAL FILM 10K 5% 2W |
| R191 | RD14BB2E124J | RES. CARBON 120K 5% 1/4W |
| R192 | RD14BB2E103J | RES. CARBON 10K 5% 1/4W |
| R195 | RD14BB2E821J | RES. CARBON 820 5% 1/4W |
| R196 | RD14BB2E821J | RES. CARBON 820 5% 1/4W |
| R197 | NO USE | |
| R198 | RD14BB2E222J | RES. CARBON 2.2K 5% 1/4W |
| R199 | RD14BB2E221J | RES. CARBON 220 5% 1/4W |
| R200 | RN14BK2E1004F | RES. METAL FILM 1M 1% 1/4W |
| R201 | RD14BB2E104J | RES. CARBON 100K 5% 1/4W |
| R202 | RD14BB2E153J | RES. CARBON 15K 5% 1/4W |
| R203 | RD14BB2E472J | RES. CARBON 4.7K 5% 1/4W |
| R204 | RD14BB2E751J | RES. CARBON 750 5% 1/4W |
| R205 | RD14BB2E102J | RES. CARBON 1K 5% 1/4W |
| R206 | NO USE | |
| R207 | RN14BK2E9101F | RES. METAL FILM 9.1K 1% 1/4W |
| R210 | RD14BB2E101J | RES. CARBON 100 5% 1/4W |
| R211 | RD14BB2E470J | RES. CARBON 47 5% 1/4W |
| R212 | RD14BB2E101J | RES. CARBON 100 5% 1/4W |
| R213 | RD14BB2E152J | RES. CARBON 1.5K 5% 1/4W |
| R214 | RN14BK2E5101F | RES. METAL FILM 5.1K 1% 1/4W |
| R217 | RD14BB2E562J | RES. CARBON 5.6K 5% 1/4W |
| R221 | RD14BB2E133J | RES. CARBON 13K 5% 1/4W |
| R222 | RD14BB2C102J | RES. CARBON 1K 5% 1/6W |
| R223 | NO USE | |
| R224 | RD14BB2E103J | RES. CARBON 10K 5% 1/4W |
| R227 | RD14BB2C102J | RES. CARBON 1K 5% 1/6W |
| R228 | RD14BB2C133J | RES. CARBON 13K 5% 1/6W |
| S101 | R01-3510-05 | V.R. WITH SW. 10K B |
| S102 | R01-3510-05 | V.R. WITH SW. 10K B |
| S103 | S02-2508-15 | ROTARY SWITCH WITH VR.2K,10KB |
| S104 | S32-2012-05 | LEVER SWITCH |
| S105 | S32-2012-05 | LEVER SWITCH |
| S106 | S32-4007-05 | SLIDE SWITCH |
| T001 | L19-0413-05 | CONVERTOR TRANSFORMER |
| TC101 | C05-0422-05 | CAP. TRIMMER 20P |
| TC102 | C05-0420-05 | CAP. TRIMMER 6P |
| U001 | NJM4558D | IC |
| U101 | MC10103L | IC, QUAD 2-INPUT OR GATE |
| U102 | SN74LS112N | IC |
| U103 | SN74LS02N | IC, QUAD 2-INPUT NOR GATE |
| VR001 | R12-5516-05 | RES. SEMI FIXED 100K B |
| VR101 | R01-3510-05 | V.R. WITH SW. 10K B |
| VR102 | R01-3510-05 | V.R. WITH SW. 10K B |
| VR103 | S02-2508-15 | ROTARY SWITCH WITH VR.2K,10KB |
| VR104 | R12-3520-05 | RES. SEMI FIXED 10K B |
| VR105 | R12-1518-05 | RES. SEMI FIXED 2K B |
| VR106 | R12-0421-05 | RES. SEMI FIXED 100 B |

# PARTS LIST

| REF.NO | PARTS NO | NAME & DESCRIPTION |
|---|---|---|
| VR107 | R12-1517-05 | RES. SEMI FIXED 1K B |
| VR108 | NO USE | |
| VR109 | R12-5518-05 | RES. SEMI FIXED 200K OHM B |
| VR110 | R12-1517-05 | RES. SEMI FIXED 1K B |
| VR111 | R12-0540-05 | RES. SEMI FIXED 500 B |

## CONNECTION UNIT

### (X77-1260-00)

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| | E33-4037-00 | WIRE ASSY | | | |
| | J25-2995-03 | PCB (UNMOUNTED) | | | |
| | R92-0150-05 | JUMPING RES. | ZERO OHM | | |
| C001 | CQ93M1H103J | CAP. MYLAR | 0.01 | 5% | 50V |
| C002 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |
| D001 | DS442X | DIODE | | | |
| D002 | DS442X | DIODE | | | |
| D003 | S1VB40 | DIODE | | | |
| J001 | E31-2374-05 | LEAD WIRE WITH CONNECTOR | | | |
| P001 | E40-7203-05 | PIN CONNECTOR | 3P | | |
| P002 | E40-7204-05 | PIN CONNECTOR | 4P | | |
| P003 | E40-0604-05 | PIN CONNECTOR | 6P | | |
| P004 | E40-0804-05 | PIN CONNECTOR | 8P | | |
| P005 | E40-0804-05 | PIN CONNECTOR | 8P | | |
| P006 | E40-1111-05 | PIN CONNECTOR | 11P | | |
| P007 | E40-1111-05 | PIN CONNECTOR | 11P | | |
| P008 | E40-1111-05 | PIN CONNECTOR | 11P | | |
| P009 | E40-1111-05 | PIN CONNECTOR | 11P | | |
| P010 | E40-0273-05 | PIN CONNECTOR | 2 P | | |
| P011 | E40-0373-05 | PIN CONNECTOR | 3 P | | |
| P012 | E40-0273-05 | PIN CONNECTOR | 2 P | | |
| P013 | E40-0273-05 | PIN CONNECTOR | 2 P | | |
| P014 | E40-0273-05 | PIN CONNECTOR | 2 P | | |
| P015 | E40-0673-05 | PIN CONNECTOR | 6 P | | |
| Q001 | 2SC1384 | TR. SI, NPN | | | |
| Q002 | 2SA684 | TR. SI, PNP | | | |
| R001 | RD14BB2E331J | RES. CARBON | 330 | 5% | 1/4W |
| R002 | RD14BB2E103J | RES. CARBON | 10K | 5% | 1/4W |
| R003 | RD14BB2E103J | RES. CARBON | 10K | 5% | 1/4W |
| R004 | RD14BB2E103J | RES. CARBON | 10K | 5% | 1/4W |
| R005 | RD14BB2E330J | RES. CARBON | 33 | 5% | 1/4W |
| R006 | RN14BK2E1300F | RES. METAL FILM | 130 | 1% | 1/4W |
| R007 | RN14BK2E4302F | RES. METAL FILM | 43K | 1% | 1/4W |
| R008 | RN14BK2E9102F | RES. METAL FILM | 91K | 1% | 1/4W |
| R009 | RN14BK2E1003F | RES. METAL FILM | 100K | 1% | 1/4W |
| R010 | RN14BK2E3601F | RES. METAL FILM | 3.6K | 1% | 1/4W |
| R011 | RD14BB2E392J | RES. CARBON | 3.9K | 5% | 1/4W |
| R012 | NO USE | | | | |
| R013 | RD14BY2H100J | RES. CARBON | 10 | 5% | 1/2W |
| R014 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R015 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| U001 | NJM4558D | IC | | | |

## CONNECTION UNIT

### (X77-1260-01)

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| | E33-4037-00 | WIRE ASSY | | | |
| | J25-2995-03 | PCB (UNMOUNTED) | | | |
| | R92-0150-05 | JUMPING RES. | ZERO OHM | | |
| C001 | CQ93M1H103J | CAP. MYLAR | 0.01 | 5% | 50V |
| C002 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |
| D001 | DS442X | DIODE | | | |
| D002 | DS442X | DIODE | | | |
| D003 | S1QB40 | DIODE | | | |
| D004 | WZ-120 | DIODE | | | |
| J001 | E31-2374-05 | LEAD WIRE WITH CONNECTOR | | | |
| P001 | E40-0373-05 | PIN CONNECTOR | 3P | | |
| P001 | E40-7203-05 | PIN CONNECTOR | 3P | | |
| P002 | E40-7204-05 | PIN CONNECTOR | 4P | | |
| P003 | E40-0604-05 | PIN CONNECTOR | 6P | | |
| P004 | E40-0804-05 | PIN CONNECTOR | 8P | | |
| P005 | E40-0804-05 | PIN CONNECTOR | 8P | | |
| P006 | E40-1111-05 | PIN CONNECTOR | 11P | | |
| P007 | E40-1111-05 | PIN CONNECTOR | 11P | | |
| P008 | E40-1111-05 | PIN CONNECTOR | 11P | | |
| P009 | E40-1111-05 | PIN CONNECTOR | 11P | | |
| P010 | E40-0273-05 | PIN CONNECTOR | 2P | | |
| P011 | NO USE | | | | |
| P012 | E40-0273-05 | PIN CONNECTOR | 2P | | |
| P013 | E40-0273-05 | PIN CONNECTOR | 2P | | |
| P014 | E40-0273-05 | PIN CONNECTOR | 2P | | |
| P015 | E40-0673-05 | PIN CONNECTOR | 6P | | |
| Q001 | 2SC1384 | TR. SI, NPN | | | |
| Q002 | 2SA684 | TR. SI, PNP | | | |
| R001 | RD14BB2E331J | RES. CARBON | 330 | 5% | 1/4W |
| R005 | RD14BB2E330J | RES. CARBON | 33 | 5% | 1/4W |
| R006 | RN14BK2E1300F | RES. METAL FILM | 130 | 1% | 1/4W |
| R007 | RN14BK2E4302F | RES. METAL FILM | 43K | 1% | 1/4W |
| R008 | RN14BK2E9102F | RES. METAL FILM | 91K | 1% | 1/4W |
| R009 | RN14BK2E1003F | RES. METAL FILM | 100K | 1% | 1/4W |
| R010 | RN14BK2E3601F | RES. METAL FILM | 3.6K | 1% | 1/4W |
| R011 | RD14BB2E392J | RES. CARBON | 3.9K | 5% | 1/4W |
| R012 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R013 | RD14BY2H100J | RES. CARBON | 10 | 5% | 1/2W |
| U001 | NJM4558D | IC | | | |

## CONNECTION UNIT

### (X77-1260-02)

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| | E33-4037-00 | WIRE ASSY | | | |
| | J25-2995-03 | PCB (UNMOUNTED) | | | |
| | R92-0150-05 | JUMPING RES. | ZERO OHM | | |
| C001 | CQ93M1H103J | CAP. MYLAR | 0.01 | 5% | 50V |
| C002 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |
| D001 | DS442X | DIODE | | | |
| D002 | DS442X | DIODE | | | |
| D003 | S1VB40 | DIODE | | | |
| J001 | E31-2374-05 | LEAD WIRE WITH CONNECTOR | | | |
| P001 | E40-7203-05 | PIN CONNECTOR | 3P | | |
| P002 | E40-7204-05 | PIN CONNECTOR | 4P | | |
| P003 | E40-0604-05 | PIN CONNECTOR | 6P | | |
| P004 | E40-0804-05 | PIN CONNECTOR | 8P | | |
| P005 | E40-0804-05 | PIN CONNECTOR | 8P | | |
| P006 | E40-1111-05 | PIN CONNECTOR | 11P | | |
| P007 | E40-1111-05 | PIN CONNECTOR | 11P | | |
| P008 | E40-1111-05 | PIN CONNECTOR | 11P | | |
| P009 | E40-1111-05 | PIN CONNECTOR | 11P | | |
| P010 | E40-0273-05 | PIN CONNECTOR | 2 P | | |
| P011 | E40-0373-05 | PIN CONNECTOR | 3 P | | |
| P012 | E40-0273-05 | PIN CONNECTOR | 2 P | | |
| P013 | E40-0273-05 | PIN CONNECTOR | 2 P | | |
| P014 | E40-0273-05 | PIN CONNECTOR | 2 P | | |
| P015 | E40-0673-05 | PIN CONNECTOR | 6 P | | |
| Q001 | 2SC1384 | TR. SI, NPN | | | |
| Q002 | 2SA684 | TR. SI, PNP | | | |
| R001 | RD14BB2E331J | RES. CARBON | 330 | 5% | 1/4W |
| R002 | RD14BB2E103J | RES. CARBON | 10K | 5% | 1/4W |
| R003 | RD14BB2E103J | RES. CARBON | 10K | 5% | 1/4W |
| R004 | RD14BB2E103J | RES. CARBON | 10K | 5% | 1/4W |
| R005 | RD14BB2E221J | RES. CARBON | 220 | 5% | 1/4W |
| R006 | RN14BK2E1300F | RES. METAL FILM | 130 | 1% | 1/4W |
| R007 | RN14BK2E4302F | RES. METAL FILM | 43K | 1% | 1/4W |
| R008 | RN14BK2E9102F | RES. METAL FILM | 91K | 1% | 1/4W |
| R009 | RN14BK2E1003F | RES. METAL FILM | 100K | 1% | 1/4W |
| R010 | RN14BK2E3601F | RES. METAL FILM | 3.6K | 1% | 1/4W |
| R011 | RD14BB2E392J | RES. CARBON | 3.9K | 5% | 1/4W |
| R012 | NO USE | | | | |
| R013 | RD14BY2H100J | RES. CARBON | 10 | 5% | 1/2W |
| R014 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R015 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| U001 | NJM4558D | IC | | | |

## CONNECTION UNIT

### (X77-1260-03)

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| | E33-4037-00 | WIRE ASSY | | | |
| | J25-2995-03 | PCB (UNMOUNTED) | | | |
| | R92-0150-05 | JUMPING RES. | ZERO OHM | | |
| C001 | CQ93M1H103J | CAP. MYLAR | 0.01 | 5% | 50V |
| C002 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |
| D001 | DS442X | DIODE | | | |
| D002 | DS442X | DIODE | | | |
| D003 | S1QB40 | DIODE | | | |
| D004 | WZ-120 | DIODE | | | |
| J001 | E31-2374-05 | LEAD WIRE WITH CONNECTOR | | | |

# PARTS LIST

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| P001 | E40-0373-05 | PIN CONNECTOR | 3P | | |
| P001 | E40-7203-05 | PIN CONNECTOR | 3P | | |
| P002 | E40-7204-05 | PIN CONNECTOR | 4P | | |
| P003 | E40-0604-05 | PIN CONNECTOR | 6P | | |
| P004 | E40-0804-05 | PIN CONNECTOR | 8P | | |
| P005 | E40-0804-05 | PIN CONNECTOR | 8P | | |
| P006 | E40-1111-05 | PIN CONNECTOR | 11P | | |
| P007 | E40-1111-05 | PIN CONNECTOR | 11P | | |
| P008 | E40-1111-05 | PIN CONNECTOR | 11P | | |
| P009 | E40-1111-05 | PIN CONNECTOR | 11P | | |
| P010 | E40-0273-05 | PIN CONNECTOR | 2P | | |
| P011 | NO USE | | | | |
| P012 | E40-0273-05 | PIN CONNECTOR | 2P | | |
| P013 | E40-0273-05 | PIN CONNECTOR | 2P | | |
| P014 | E40-0273-05 | PIN CONNECTOR | 2P | | |
| P015 | E40-0673-05 | PIN CONNECTOR | 6P | | |
| Q001 | 2SC1384 | TR. SI, NPN | | | |
| Q002 | 2SA684 | TR. SI, PNP | | | |
| R001 | RD14BB2E331J | RES. CARBON | 330 | 5% | 1/4W |
| R005 | RD14BB2E221J | RES. CARBON | 220 | 5% | 1/4W |
| R006 | RN14BK2E1300F | RES. METAL FILM | 130 | 1% | 1/4W |
| R007 | RN14BK2E4302F | RES. METAL FILM | 43K | 1% | 1/4W |
| R008 | RN14BK2E9102F | RES. METAL FILM | 91K | 1% | 1/4W |
| R009 | RN14BK2E1003F | RES. METAL FILM | 100K | 1% | 1/4W |
| R010 | RN14BK2E3601F | RES. METAL FILM | 3.6K | 1% | 1/4W |
| R011 | RD14BB2E392J | RES. CARBON | 3.9K | 5% | 1/4W |
| R012 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R013 | RD14BY2H100J | RES. CARBON | 10 | 5% | 1/2W |
| U001 | NJM4558D | IC | DUAL OP AMP. | | |

## CRT SOCKET UNIT

### (X81-1250-00)

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| | E01-0103-05 | CRT SOCKET | | | |
| | J25-2996-14 | PCB (UNMOUNTED) | | | |
| | R92-0150-05 | JUMPING RES. | ZERO OHM | | |
| J016 | E31-2366-05 | LEAD WIRE WITH CONNECTOR | | | |
| J017 | E31-2366-05 | LEAD WIRE WITH CONNECTOR | | | |
| J018 | NO USE | | | | |
| J019 | E31-2364-05 | LEAD WIRE WITH CONNECTOR | | | |
| J020 | NO USE | | | | |
| J021 | E31-2363-05 | LEAD WIRE WITH CONNECTOR | | | |
| J022 | NO USE | | | | |
| J023 | E31-2365-05 | LEAD WIRE WITH CONNECTOR | | | |
| L001 | L40-2292-13 | FIXED INDUCTOR | 2.2UH | | |
| L002 | L40-2292-13 | FIXED INDUCTOR | 2.2UH | | |
| R001 | RD14BB2E151J | RES. CARBON | 150 | 5% | 1/4W |
| R002 | RD14BB2E151J | RES. CARBON | 150 | 5% | 1/4W |

## CRT SOCKET UNIT

### (X81-1250-01)

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| | E01-0103-05 | CRT SOCKET | | | |
| | J25-2996-14 | PCB (UNMOUNTED) | | | |
| C001 | CC45CH2H010C | CAP. CERAMIC | 1P | 0.25P | 500V |
| C002 | CC45SL1H050C | CAP. CERAMIC | 5P | 0.25P | 50V |
| J016 | E31-2366-05 | LEAD WIRE WITH CONNECTOR | | | |
| J017 | E31-2366-05 | LEAD WIRE WITH CONNECTOR | | | |
| J018 | NO USE | | | | |
| J019 | E31-2364-05 | LEAD WIRE WITH CONNECTOR | | | |
| J020 | NO USE | | | | |
| J021 | E31-2363-05 | LEAD WIRE WITH CONNECTOR | | | |
| J022 | NO USE | | | | |
| J023 | E31-2365-05 | LEAD WIRE WITH CONNECTOR | | | |
| L001 | L40-2792-13 | FIXED INDUCTOR | 2.7UH | | |
| L002 | L40-2792-13 | FIXED INDUCTOR | 2.7UH | | |
| R001 | RD14BB2E681J | RES. CARBON | 680 | 5% | 1/4W |
| R002 | RD14BB2E681J | RES. CARBON | 680 | 5% | 1/4W |

## CS-1021 Y70-1530-61

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| | A01-0897-22 | CASE | | | |
| | A01-0898-12 | CASE | | | |
| | A10-1444-02 | CHASSIS | | | |
| | A20-2761-02 | PANEL (MOLDED) | | | |
| | A21-1076-02 | DECORATIVE PANEL | | | |
| | A22-0826-02 | SUB PANEL | | | |
| | A22-0827-13 | SUB PANEL | | | |
| | A23-1643-02 | REAR PANEL | | | |
| | B07-0712-13 | ESCUTCHEON FOR FILTER | | | |
| | B19-0726-04 | FILTER | | | |
| | B30-0903-15 | LED LAMP (RED) | | | |
| | B39-0407-04 | SPACER | | | |
| | B40-2765-04 | NAME PLATE (SERIAL NO) | | | |
| | B41-0774-03 | CAUTION LABEL | | | |
| | B50-7570-00 | INSTRUCTION MANUAL | | | |
| | E04-0251-05 | BNC RECEPTACLE | | | |
| | E21-0657-04 | TERMINAL (GND) | | | |
| | E21-0660-04 | TERMINAL(CAL) | | | |
| | E23-0043-04 | EARTH LUG | | | |
| | E23-0513-05 | EARTH LUG | | | |
| | E23-0524-04 | EARTH LUG | | | |
| | E23-0525-14 | EARTH PLATE | | | |
| | E30-1852-05 | POWER CORD ASS'Y (CEE) | | | |
| | E31-2370-05 | LEAD WIRE WITH CONNECTOR | | | |
| | E31-2384-15 | LEAD WIRE WITH CONNECTOR | | | |
| | F05-5013-05 | FUSE | 0.5A | | |
| | F05-8015-05 | FUSE | 0.8A | | |
| | F10-1565-04 | SHIELDING PLATE | | | |
| | F11-0995-03 | SHIELD CASE | | | |
| | F15-0733-04 | FELT | | | |
| | G02-0607-04 | SPRING FOR CRT | | | |
| | G13-0716-04 | CUSHION | | | |
| | H01-5769-04 | CARTON BOX | | | |
| | H10-2815-02 | FOAMED STYRENE PAD | | | |
| | H10-2816-02 | FOAMED STYRENE PAD | | | |
| | H20-1719-04 | VINYL COVER | | | |
| | H25-0029-04 | POLYETHYLENE BAG | | | |
| | J02-0089-05 | RUBBER LEG | | | |
| | J02-0510-14 | SUB LEG | | | |
| | J10-0100-22 | BEZEL | | | |
| | J11-0046-05 | CABLE CLAMP | | | |
| | J13-0033-15 | FUSE HOLDER | | | |
| | J19-1634-04 | HOLDER FOR LEAD | | | |
| | J19-1635-04 | HOLDER FOR LED | | | |
| | J21-2573-04 | HOLDER FOR LEG | | | |
| | J21-2970-23 | BLACKET FOR CRT | | | |
| | J21-2973-14 | AC VOLTAGE PLATE220V | | | |
| | J21-4512-04 | BLACKET FOR CRT | | | |
| | J31-0603-04 | COLLAR | | | |
| | J42-0085-05 | BUSHING (FOR AC CORD) | | | |
| | J42-0523-04 | BUSHING | | | |
| | J61-0038-05 | FREE UP BELT (FOR CABLE TIE) | | | |
| | J61-0408-05 | WIRE WRAPPING BAND | | | |
| | J61-0515-05 | SUPPORT (I TYPE) | | | |
| | J61-0516-05 | SUPPORT (T TYPE) | | | |
| | K01-0518-05 | HANDLE | | | |
| | K21-0851-03 | KNOB | | | |
| | K21-0853-23 | KNOB | | | |
| | K21-0854-23 | KNOB | | | |
| | K21-0855-14 | KNOB | | | |
| | K21-0856-23 | KNOB | | | |
| | K27-0526-04 | KNOB FOR LEVER | | | |
| | K27-0528-04 | KNOB FOR PUSH | | | |
| | L01-9344-15 | POWER TRANSFORMER | | | |
| | L39-0518-05 | ROTATOR COIL | | | |
| | N08-0611-04 | DRESSED SCREW | | | |
| | N09-0715-04 | SCREW, PAN HD | M 4X31 | | |
| | N09-0716-05 | SCREW | M 4X10 | | |
| | N09-0717-05 | SCREW, TRUSS HD | M 3X12 | | |
| | N09-0720-05 | SCREW, SEMS PAN HD | | | |
| | N10-2030-46 | NUT, HEX | | | |
| | N10-2070-46 | NUT, HEX | | | |
| | N15-1030-41 | WASHER, FLAT FOR M3 | | | |
| | N15-1040-41 | WASHER | | | |
| | N17-1030-46 | TOOTHED LOCK WASHER FOR M3 | | | |
| | N30-3004-41 | SCREW, PAN HD | M 3X4 | | |
| | N30-3006-41 | SCREW, PAN HD | M 3X6 | | |
| | N30-3008-41 | SCREW, PAN HD | M 3X8 | | |
| | N88-3006-41 | SCREW, FLAT HD TAP TITE | | | |
| | N89-3006-41 | SCREW, BINDING TAP TITE | | | |
| | R05-3504-05 | V.R. | 10K B | | |
| | R05-3505-05 | V.R. | 20K B | | |
| | R05-8001-05 | V.R. | 3M B | | |
| | S59-2503-05 | SWITCH | | | |
| | W01-0503-04 | CORD WRAP | | | |
| | X73-1490-04 | AMPLIFIER UNIT | | | |
| | X73-1630-00 | AMPLIFIER UNIT | | | |
| | X74-1340-04 | SWEEP CIRCUIT UNIT | | | |
| | X75-1140-04 | ATTENUATOR UNIT | | | |
| | X77-1261-61 | CONNECTION UNIT | | | |
| | X81-1250-04 | CRT SOCKET UNIT | | | |
| | Y87-1840-00 | PROBE PC-20 | | | |
| | 150GTM31A | CRT | | | |
| | 212-2014-05 | TUBE (PLASTIC) | | | |
| | 212-3017-05 | TUBE (PLASTIC) | | | |
| R100 | RD14BB2E431J | RES. CARBON | 430 | 5% | 1/4W |

# PARTS LIST

## VERTICAL ATTENUATOR UNIT

### (X75-1140-04)

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| | A22-0828-03 | SUB PANEL | | | |
| | E04-0251-05 | BNC RECEPTACLE | | | |
| | E31-2367-15 | LEAD WIRE WITH CONNECTOR | | | |
| | F10-1564-04 | SHIELD PLATE | | | |
| | F10-1566-04 | SHIELD PLATE | | | |
| | J25-2997-13 | PCB (UNMOUNTED) | | | |
| | K21-0852-03 | KNOB | | | |
| | K21-0855-14 | KNOB | | | |
| | N30-3006-46 | SCREW, PAN HD | M 3X6 | | |
| | N89-3006-41 | SCREW, BINDING TAP TITE | | | |
| | R92-0150-05 | JUMPING RES. | ZERO OHM | | |
| C001 | C91-0501-05 | CAP. METAL FILM | 0.047 | 10% | 630V |
| C002 | CM93BD2A470J | CAP. MICA | 47P | 5% | 100V |
| C003 | CM93BD2A471J | CAP. MICA | 470P | 5% | 100V |
| C004 | C91-0502-05 | CAP. METAL FILM | 0.01 | 20% | 630V |
| C005 | NO USE | | | | |
| C006 | CC45CH1H0R5C | CAP. CERAMIC | 0.5P | 0.25P | 50V |
| C009 | CC45CH1H470J | CAP. CERAMIC | 47P | 5% | 50V |
| C010 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |
| C011 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |
| C012 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |
| C013 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C014 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C015 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C016 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C017 | NO USE | | | | |
| C018 | CC45CH1H010C | CAP. CERAMIC | 1P | 0.25P | 50V |
| C019 | CE04BW1H010M | CAP. ELECTRO | 1 | 20% | 50V |
| C020 | CK45B1H152K | CAP. CERAMIC | 1500P | 10% | 50V |
| C023 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |
| D001 | MTZ9.1JC | DIODE ZENER | 9V | | |
| D002 | MTZ9.1JC | DIODE ZENER | 9V | | |
| Q001 | 2SK30A(O) | FET,N-CHANNEL | | | |
| Q002 | 2SA1005(K) | TR. SI, PNP | | | |
| Q003 | 2SA1005(K) | TR. SI, PNP | | | |
| Q004 | 2SC2786(K) | TR. SI, NPN | | | |
| Q005 | 2SC2786(K) | TR. SI, NPN | | | |
| R001 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R002 | RD14BB2E105J | RES. CARBON | 1M | 5% | 1/4W |
| R003 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R004 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R005 | RN14BK2E9003F | RES. METAL FILM | 900K | 1% | 1/4W |
| R006 | RN14BK2E1113F | RES. METAL FILM | 111K | 1% | 1/4W |
| R007 | RD14BB2E820J | RES. CARBON | 82 | 5% | 1/4W |
| R008 | RN14BK2E9903F | RES. METAL FILM | 990K | 1% | 1/4W |
| R009 | RN14BK2E1012F | RES. METAL FILM | 10.1K | 1% | 1/4W |
| R010 | RD14BB2E100J | RES. CARBON | 10 | 5% | 1/4W |
| R011 | RN14BK2E1004F | RES. METAL FILM | 1M | 1% | 1/4W |
| R012 | RD14BB2E104J | RES. CARBON | 100K | 5% | 1/4W |
| R013 | RN14BK2E27R0F | RES. METAL FILM | 27.0 | 1% | 1/4W |
| R014 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R015 | RN14BK2E27R0F | RES. METAL FILM | 27.0 | 1% | 1/4W |
| R016 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R017 | NO USE | | | | |
| R018 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R019 | RD14BB2E121J | RES. CARBON | 120 | 5% | 1/4W |
| R020 | RD14BB2E473J | RES. CARBON | 47K | 5% | 1/4W |
| R021 | RD14BB2E474J | RES. CARBON | 470K | 5% | 1/4W |
| R022 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R023 | RD14BB2E562J | RES. CARBON | 5.6K | 5% | 1/4W |
| R024 | RD14BB2E562J | RES. CARBON | 5.6K | 5% | 1/4W |
| R025 | RD14BB2E392J | RES. CARBON | 3.9K | 5% | 1/4W |
| R026 | RD14BB2E753J | RES. CARBON | 75K | 5% | 1/4W |
| R027 | RD14BB2E754J | RES. CARBON | 750K | 5% | 1/4W |
| R028 | RD14BB2E122J | RES. CARBON | 1.2K | 5% | 1/4W |
| R029 | RD14BB2C332J | RES. CARBON | 3.3K | 5% | 1/6W |
| R030 | RD14BB2E332J | RES. CARBON | 3.3K | 5% | 1/4W |
| R031 | RD14BB2E332J | RES. CARBON | 3.3K | 5% | 1/4W |
| R032 | NO USE | | | | |
| R033 | RN14BK2E9100F | RES. METAL FILM | 910 | 1% | 1/4W |
| R034 | RN14BK2E1000F | RES. METAL FILM | 100 | 1% | 1/4W |
| R035 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R036 | RN14BK2E3000F | RES. METAL FILM | 300 | 1% | 1/4W |
| R037 | RN14BK2E1800F | RES. METAL FILM | 180 | 1% | 1/4W |
| R038 | RN14BK2E1200F | RES. METAL FILM | 120 | 1% | 1/4W |
| R039 | RD14BB2E151J | RES. CARBON | 150 | 5% | 1/4W |
| R040 | RD14BB2E560J | RES. CARBON | 56 | 5% | 1/4W |
| R041 | RN14BK2E3000F | RES. METAL FILM | 300 | 1% | 1/4W |
| R042 | RN14BK2E1800F | RES. METAL FILM | 180 | 1% | 1/4W |
| R043 | RN14BK2E1200F | RES. METAL FILM | 120 | 1% | 1/4W |
| R044 | RD14BB2E151J | RES. CARBON | 150 | 5% | 1/4W |
| R045 | RD14BB2E560J | RES. CARBON | 56 | 5% | 1/4W |
| R046 | RD14BB2E333J | RES. CARBON | 33K | 5% | 1/4W |
| R047 | RD14BB2E473J | RES. CARBON | 47K | 5% | 1/4W |
| R048 | RD14BB2E472J | RES. CARBON | 4.7K | 5% | 1/4W |
| R049 | RD14BB2C163J | RES. CARBON | 16K | 5% | 1/6W |
| R050 | NO USE | | | | |
| R051 | RD14BB2E361J | RES. CARBON | 360 | 5% | 1/4W |
| R052 | RD14BB2C910J | RES. CARBON | 91 | 5% | 1/6W |
| R053 | RD14BB2C111J | RES. CARBON | 110 | 5% | 1/6W |
| S001 | S32-4007-05 | LEVER SWITCH | | | |
| S002 | S02-3501-15 | ROTARY SW. W/V.R500 B | | | |
| TC001 | C05-0427-05 | CAP. TRIMMER | 10P | | |
| TC002 | C05-0428-05 | CAP. TRIMMER | 20P | | |
| TC003 | C05-0427-05 | CAP. TRIMMER | 10P | | |
| TC004 | C05-0428-05 | CAP. TRIMMER | 20P | | |
| TC005 | C05-0427-05 | CAP. TRIMMER | 10P | | |
| U001 | M47F(C) | FET | | | |
| U002 | NO USE | | | | |
| U003 | M47F(B) | FET | | | |
| VR001 | R12-3502-05 | RES. SEMI FIXED | 33K B | | |
| VR002 | R12-3502-05 | RES. SEMI FIXED | 33K B | | |
| VR003 | R12-3502-05 | RES. SEMI FIXED | 33K B | | |
| VR004 | R12-3502-05 | RES. SEMI FIXED | 33K B | | |

## VERTICAL AMP & POWER UNIT

### (X73-1490-04)

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| | E23-0526-04 | EARTH PLATE | | | |
| | E31-2584-05 | LEAD WIRE WITH CONNECTOR | | | |
| | E31-2585-05 | LEAD WIRE WITH CONNECTOR | | | |
| | E33-4031-00 | WIRE ASSY | | | |
| | F01-0836-04 | HEAT SINK | | | |
| | J25-2999-13 | PCB (UNMOUNTED) | | | |
| | N19-0191-05 | WASHER NONMETAL | | | |
| | N19-0702-04 | WASHER | | | |
| | N30-3008-46 | SCREW, PAN HD | M 3X8 | | |
| | R92-0150-05 | JUMPING RES. | ZERO OHM | | |
| | 212-1018-05 | TUBE (PLASTIC) | | | |
| | 212-2014-05 | TUBE (PLASTIC) | | | |
| C002 | CC45CH1H010C | CAP. CERAMIC | 1P | 0.25P | 50V |
| C006 | CC45CH1H151J | CAP. CERAMIC | 150P | 5% | 50V |
| C007 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |
| C008 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C009 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C013 | CC45CH1H470J | CAP. CERAMIC | 47P | 5% | 50V |
| C014 | CE04W1E220M | CAP. ELECTRO | 22 | 20% | 25V |
| C015 | NO USE | | | | |
| C016 | CE04W1E220M | CAP. ELECTRO | 22 | 20% | 25V |
| C020 | CC45CH1H1R5C | CAP. CERAMIC | 1.5P | 0.25P | 50V |
| C102 | CC45CH1H010C | CAP. CERAMIC | 1P | 0.25P | 50V |
| C103 | NO USE | | | | |
| C104 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C105 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C106 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C107 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C108 | NO USE | | | | |
| C109 | CC45CH1H470J | CAP. CERAMIC | 47P | 5% | 50V |
| C110 | CC45CH1H470J | CAP. CERAMIC | 47P | 5% | 50V |
| C111 | CE04BW1H010M | CAP. ELECTRO | 1 | 20% | 50V |
| C112 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |
| C115 | CC45CH1H020C | CAP. CERAMIC | 2P | 0.25P | 50V |
| C301 | CE04W1V222M | CAP. ELECTRO | 2200 | 20% | 35V |
| C302 | CE04W1V222M | CAP. ELECTRO | 2200 | 20% | 35V |
| C303 | CE04W1E222M | CAP. ELECTRO | 2200 | 20% | 25V |
| C304 | C90-0910-05 | CAP. ELECTRO | 100 | 20% | 200V |
| C305 | CE04W2E470 | CAP. ELECTRO | 47 | | 250V |
| C306 | CE04W1A101M | CAP. ELECTRO | 100 | 20% | 10V |
| C307 | CE04W1E101M | CAP. ELECTRO | 100 | 20% | 25V |
| C308 | CE04W1E101M | CAP. ELECTRO | 100 | 20% | 25V |
| C309 | CE04W2C100 | CAP. ELECTRO | 10 | | 160V |
| C310 | CE04W2E010 | CAP. ELECTRO | 1 | | 250V |
| C311 | CE04BW1H010M | CAP. ELECTRO | 1 | 20% | 50V |
| C312 | CE04W1H010M | CAP. ELECTRO | 1 | 20% | 50V |
| C313 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |
| C314 | CE04W1H010M | CAP. ELECTRO | 1 | 20% | 50V |
| C315 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |
| C316 | CE04W1H010M | CAP. ELECTRO | 1 | 20% | 50V |
| C317 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |
| C318 | CK45B1H102K | CAP. CERAMIC | 1000P | 10% | 50V |
| C319 | CK45B1H102K | CAP. CERAMIC | 1000P | 10% | 50V |
| C320 | CK45B2H103K | CAP. CERAMIC | 0.01 | 10% | 500V |
| D001 | DS442X | DIODE | | | |
| D101 | DS442X | DIODE | | | |
| D102 | DS442X | DIODE | | | |
| D103 | DS442X | DIODE | | | |
| D104 | DS442X | DIODE | | | |
| D105 | DS442X | DIODE | | | |
| D106 | DS442X | DIODE | | | |

# PARTS LIST

| REF.NO | PARTS NO | NAME & DESCRIPTION |
|---|---|---|
| D107 | DS442X | DIODE |
| D108 | MTZ10JC | DIODE, ZENER 10V |
| D301 | S2VB40F | DIODE, BRIDGE |
| D302 | S2VB40F | DIODE, BRIDGE |
| D303 | S1VB60 | DIODE |
| D304 | S1VB60 | DIODE |
| D305 | DS442X | DIODE |
| D306 | DS442X | DIODE |
| D307 | V06B | DIODE |
| P001 | E40-0473-05 | PIN CONNECTOR 4 P |
| P002 | E40-0273-05 | PIN CONNECTOR 2 P |
| P101 | E40-0473-05 | PIN CONNECTOR 4 P |
| P301 | E40-0930-05 | PIN CONNECTOR 9P |
| P302 | E40-1116-05 | PIN CONNECTOR 11 P |
| P303 | E40-1116-05 | PIN CONNECTOR 11 P |
| Q002 | 2SA1005(K) | TR. SI, PNP |
| Q003 | 2SA1005(K) | TR. SI, PNP |
| Q004 | 2SC2786(K) | TR. SI, NPN |
| Q005 | 2SC2786(K) | TR. SI, NPN |
| Q009 | 2SC2786(K) | TR. SI, NPN |
| Q010 | 2SC2786(K) | TR. SI, NPN |
| Q011 | 2SC2786(K) | TR. SI, NPN |
| Q012 | 2SC2786(K) | TR. SI, NPN |
| Q013 | 2SC2786(K) | TR. SI, NPN |
| Q014 | 2SC2786(K) | TR. SI, NPN |
| Q015 | 2SC2407 | TR. SI, NPN |
| Q016 | 2SC2407 | TR. SI, NPN |
| Q102 | 2SA1005(K) | TR. SI, PNP |
| Q103 | 2SA1005(K) | TR. SI, PNP |
| Q104 | 2SC2786(K) | TR. SI, NPN |
| Q105 | 2SC2786(K) | TR. SI, NPN |
| Q106 | 2SC2785(F) | TR. SI, NPN |
| Q107 | 2SC2786(K) | TR. SI, NPN |
| Q108 | 2SC2786(K) | TR. SI, NPN |
| Q109 | 2SC2786(K) | TR. SI, NPN |
| Q110 | 2SC2786(K) | TR. SI, NPN |
| Q111 | 2SC2786(K) | TR. SI, NPN |
| Q112 | 2SC2786(K) | TR. SI, NPN |
| Q113 | 2SA1175(F) | TR. SI, PNP |
| Q114 | 2SC2785(F) | TR. SI, NPN |
| Q115 | 2SC2786(K) | TR. SI, NPN |
| Q301 | 2SA1009(L,K) | TR. SI, PNP |
| Q302 | 2SA1009(L,K) | TR. SI, PNP |
| Q303 | 2SA1175(F) | TR. SI, PNP |
| Q304 | 2SA1175(F) | TR. SI, PNP |
| Q305 | 2SC2271(E) | TR. SI, NPN |
| Q306 | 2SC2271(E) | TR. SI, NPN |
| R001 | RD14BB2E105J | RES. CARBON 1M 5% 1/4W |
| R002 | RD14BB2E220J | RES. CARBON 22 5% 1/4W |
| R003 | RD14BB2E562J | RES. CARBON 5.6K 5% 1/4W |
| R004 | RD14BB2E562J | RES. CARBON 5.6K 5% 1/4W |
| R005 | RD14BB2E120J | RES. CARBON 12 5% 1/4W |
| R006 | RD14BB2E510J | RES. CARBON 51 5% 1/4W |
| R007 | RD14BB2E510J | RES. CARBON 51 5% 1/4W |
| R008 | RD14BB2E392J | RES. CARBON 3.9K 5% 1/4W |
| R009 | RD14BB2E102J | RES. CARBON 1K 5% 1/4W |
| R010 | RD14BB2E302J | RES. CARBON 3K 5% 1/4W |
| R011 | RD14BB2E220J | RES. CARBON 22 5% 1/4W |
| R012 | RD14BB2E243J | RES. CARBON 24K 5% 1/4W |
| R013 | RD14BB2E302J | RES. CARBON 3K 5% 1/4W |
| R014 | RN14BK2E1000F | RES. METAL FILM 100 1% 1/4W |
| R015 | RN14BK2E1401F | RES. METAL FILM 1.4K 1% 1/4W |
| R016 | RD14BB2E220J | RES. CARBON 22 5% 1/4W |
| R017 | RD14BB2E302J | RES. CARBON 3K 5% 1/4W |
| R018 | RD14BB2E104J | RES. CARBON 100K 5% 1/4W |
| R019 | RD14BB2E220J | RES. CARBON 22 5% 1/4W |
| R020 | NO USE | |
| R021 | RD14BB2E331J | RES. CARBON 330 5% 1/4W |
| R031 | RD14BB2E151J | RES. CARBON 150 5% 1/4W |
| R032 | RD14BB2E101J | RES. CARBON 100 5% 1/4W |
| R033 | RD14BB2E101J | RES. CARBON 100 5% 1/4W |
| R034 | RD14BB2E222J | RES. CARBON 2.2K 5% 1/4W |
| R035 | RD14BB2E222J | RES. CARBON 2.2K 5% 1/4W |
| R036 | RN14BK2E2201F | RES. METAL FILM 2.2K 1% 1/4W |
| R037 | RN14BK2E2201F | RES. METAL FILM 2.2K 1% 1/4W |
| R038 | RD14BB2E750J | RES. CARBON 75 5% 1/4W |
| R039 | RD14BB2E431J | RES. CARBON 430 5% 1/4W |
| R040 | RD14BB2E682J | RES. CARBON 6.8K 5% 1/4W |
| R041 | RD14BB2E332J | RES. CARBON 3.3K 5% 1/4W |
| R042 | RD14BB2E471J | RES. CARBON 470 5% 1/4W |
| R043 | RD14BB2E471J | RES. CARBON 470 5% 1/4W |
| R044 | RN14BK2E8200F | RES. METAL FILM 820 1% 1/4W |
| R045 | RN14BK2E8200F | RES. METAL FILM 820 1% 1/4W |
| R046 | RN14BK2E8200F | RES. METAL FILM 820 1% 1/4W |
| R047 | RN14BK2E8200F | RES. METAL FILM 820 1% 1/4W |
| R048 | RD14BB2E101J | RES. CARBON 100 5% 1/4W |
| R049 | RD14BB2E302J | RES. CARBON 3K 5% 1/4W |
| R050 | RD14BB2E302J | RES. CARBON 3K 5% 1/4W |

| REF.NO | PARTS NO | NAME & DESCRIPTION |
|---|---|---|
| R051 | RD14BB2E101J | RES. CARBON 100 5% 1/4W |
| R052 | RD14BB2E220J | RES. CARBON 22 5% 1/4W |
| R053 | RD14BB2E220J | RES. CARBON 22 5% 1/4W |
| R054 | RD14BB2E331J | RES. CARBON 330 5% 1/4W |
| R055 | RD14BB2E331J | RES. CARBON 330 5% 1/4W |
| R056 | RD14BB2E750J | RES. CARBON 75 5% 1/4W |
| R065 | RD14BB2E201J | RES. CARBON 200 5% 1/4W |
| R066 | RD14BB2E471J | RES. CARBON 470 5% 1/4W |
| R067 | RD14BB2E272J | RES. CARBON 2.7K 5% 1/4W |
| R068 | RD14BB2E104J | RES. CARBON 100K 5% 1/4W |
| R069 | RD14BB2E223J | RES. CARBON 22K 5% 1/4W |
| R101 | RD14BB2E105J | RES. CARBON 1M 5% 1/4W |
| R102 | RD14BB2E220J | RES. CARBON 22 5% 1/4W |
| R103 | RD14BB2E562J | RES. CARBON 5.6K 5% 1/4W |
| R104 | RD14BB2E562J | RES. CARBON 5.6K 5% 1/4W |
| R105 | RD14BB2E120J | RES. CARBON 12 5% 1/4W |
| R106 | RD14BB2E510J | RES. CARBON 51 5% 1/4W |
| R107 | RD14BB2E510J | RES. CARBON 51 5% 1/4W |
| R108 | RD14BB2E392J | RES. CARBON 3.9K 5% 1/4W |
| R109 | RD14BB2E102J | RES. CARBON 1K 5% 1/4W |
| R110 | RD14BB2E302J | RES. CARBON 3K 5% 1/4W |
| R111 | RD14BB2E220J | RES. CARBON 22 5% 1/4W |
| R112 | RD14BB2E243J | RES. CARBON 24K 5% 1/4W |
| R113 | RD14BB2E302J | RES. CARBON 3K 5% 1/4W |
| R114 | RN14BK2E1000F | RES. METAL FILM 100 1% 1/4W |
| R115 | RD14BB2E104J | RES. CARBON 100K 5% 1/4W |
| R116 | RN14BK2E1401F | RES. METAL FILM 1.4K 1% 1/4W |
| R117 | RD14BB2E220J | RES. CARBON 22 5% 1/4W |
| R118 | RD14BB2E182J | RES. CARBON 1.8K 5% 1/4W |
| R119 | RD14BB2E223J | RES. CARBON 22K 5% 1/4W |
| R120 | RD14BB2E220J | RES. CARBON 22 5% 1/4W |
| R121 | RD14BB2E561J | RES. CARBON 560 5% 1/4W |
| R122 | NO USE | |
| R123 | RD14BB2E333J | RES. CARBON 33K 5% 1/4W |
| R124 | RD14BB2E151J | RES. CARBON 150 5% 1/4W |
| R125 | RD14BB2E101J | RES. CARBON 100 5% 1/4W |
| R126 | RD14BB2E101J | RES. CARBON 100 5% 1/4W |
| R127 | RD14BB2E222J | RES. CARBON 2.2K 5% 1/4W |
| R128 | RD14BB2E222J | RES. CARBON 2.2K 5% 1/4W |
| R129 | RN14BK2E2201F | RES. METAL FILM 2.2K 1% 1/4W |
| R130 | RN14BK2E2201F | RES. METAL FILM 2.2K 1% 1/4W |
| R131 | RD14BB2E750J | RES. CARBON 75 5% 1/4W |
| R132 | RN14BK2E2001F | RES. METAL FILM 2K 1% 1/4W |
| R133 | RN14BK2E2001F | RES. METAL FILM 2K 1% 1/4W |
| R134 | RD14BB2E510J | RES. CARBON 51 5% 1/4W |
| R135 | RD14BB2E511J | RES. CARBON 510 5% 1/4W |
| R136 | RD14BB2E123J | RES. CARBON 12K 5% 1/4W |
| R137 | RD14BB2E472J | RES. CARBON 4.7K 5% 1/4W |
| R138 | RD14BB2E332J | RES. CARBON 3.3K 5% 1/4W |
| R139 | RD14BB2E332J | RES. CARBON 3.3K 5% 1/4W |
| R140 | RD14BB2E471J | RES. CARBON 470 5% 1/4W |
| R141 | RD14BB2E471J | RES. CARBON 470 5% 1/4W |
| R142 | RD14BB2E471J | RES. CARBON 470 5% 1/4W |
| R143 | RD14BB2E471J | RES. CARBON 470 5% 1/4W |
| R144 | RD14BB2E272J | RES. CARBON 2.7K 5% 1/4W |
| R145 | RD14BB2E153J | RES. CARBON 15K 5% 1/4W |
| R146 | RD14BB2E153J | RES. CARBON 15K 5% 1/4W |
| R147 | RD14BB2E272J | RES. CARBON 2.7K 5% 1/4W |
| R148 | RD14BB2E223J | RES. CARBON 22K 5% 1/4W |
| R149 | RD14BB2E682J | RES. CARBON 6.8K 5% 1/4W |
| R150 | RD14BB2E102J | RES. CARBON 1K 5% 1/4W |
| R151 | RD14BB2E102J | RES. CARBON 1K 5% 1/4W |
| R152 | RD14BB2E151J | RES. CARBON 150 5% 1/4W |
| R153 | RD14BB2E101J | RES. CARBON 100 5% 1/4W |
| R154 | NO USE | |
| R155 | RD14BB2E470J | RES. CARBON 47 5% 1/4W |
| R156 | NO USE | |
| R157 | RD14BB2E331J | RES. CARBON 330 5% 1/4W |
| R158 | RD14BB2E104J | RES. CARBON 100K 5% 1/4W |
| R159 | RD14BB2E682J | RES. CARBON 6.8K 5% 1/4W |
| R301 | RD14BB2E473J | RES. CARBON 47K 5% 1/4W |
| R302 | RD14BB2E102J | RES. CARBON 1K 5% 1/4W |
| R303 | RD14BB2E3R3J | RES. CARBON 3.3 5% 1/4W |
| R304 | RD14BB2E100J | RES. CARBON 10 5% 1/4W |
| R305 | RD14BB2E562J | RES. CARBON 5.6K 5% 1/4W |
| R306 | RD14BB2E822J | RES. CARBON 8.2K 5% 1/4W |
| R307 | RD14BB2E222J | RES. CARBON 2.2K 5% 1/4W |
| R308 | RD14BB2E222J | RES. CARBON 2.2K 5% 1/4W |
| R309 | RN14BK2E1502F | RES. METAL FILM 15K 1% 1/4W |
| R310 | RN14BK2E1003F | RES. METAL FILM 100K 1% 1/4W |
| R311 | RN14BK2E1602F | RES. METAL FILM 16K 1% 1/4W |
| R312 | RN14BK2E1503F | RES. METAL FILM 150K 1% 1/4W |
| R313 | RD14BY2H104J | RES. CARBON 100K 5% 1/2W |
| R314 | RD14BY2H104J | RES. CARBON 100K 5% 1/2W |
| S101 | S42-4509-05 | PUSH SWITCH |
| TC001 | C05-0425-05 | CAP. TRIMMER 70P |
| TC002 | C05-0425-05 | CAP. TRIMMER 70P |
| TC101 | C05-0434-05 | CAP. TRIMMER 20P |
| TC102 | C05-0434-05 | CAP. TRIMMER 20P |
| TP001 | E23-0046-04 | TERMINAL |
| TP002 | E23-0046-04 | TERMINAL |

# PARTS LIST

| REF.NO | PARTS NO | NAME & DESCRIPTION |
|---|---|---|
| TP003 | E23-0046-04 | TERMINAL |
| TP004 | E23-0046-04 | TERMINAL |
| TP101 | E23-0046-04 | TERMINAL |
| TP102 | E23-0046-04 | TERMINAL |
| TP103 | E23-0046-04 | TERMINAL |
| TP104 | E23-0046-04 | TERMINAL |
| U001 | M47F(B) | FET |
| U101 | M47F(B) | FET |
| U301 | UPC7805H | IC |
| U302 | UPC7915HA | IC |
| U303 | NJM7815A | IC |
| U304 | NJM4558D | IC |
| VR001 | R05-3509-05 | V.R. 20K B |
| VR002 | NO USE | |
| VR003 | R12-0539-05 | RES. SEMI FIXED 200 B |
| VR004 | R12-0421-05 | RES. SEMI FIXED 100 B |
| VR005 | R12-0421-05 | RES. SEMI FIXED 100 B |
| VR006 | R12-0421-05 | RES. SEMI FIXED 100 B |
| VR101 | R05-3509-05 | V.R. 20K B |
| VR102 | R12-3523-05 | RES. SEMI FIXED 20K B |
| VR103 | R12-0541-05 | RES. SEMI FIXED 100 B |
| VR104 | R12-0543-05 | RES. SEMI FIXED 500 B |

## HORIZONTAL & HIGH VOLTAGE UNIT

### (X74-1340-04)

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| | E23-0015-04 | EARTH LUG | | | |
| | E23-0046-04 | TERMINAL | | | |
| | E31-2170-05 | JUMPING WIRE | | | |
| | E33-4028-00 | WIRE ASSY | | | |
| | F01-0230-04 | HEAT SINK | | | |
| | F01-0820-04 | HEAT SINK | | | |
| | F01-0835-05 | HEAT SINK | | | |
| | F15-0727-04 | HOLDER (NEON TUBE) | | | |
| | F20-0622-05 | INSULATOR | | | |
| | J25-2998-13 | PCB (UNMOUNTED) | | | |
| | J31-0604-04 | COLLAR | | | |
| | N19-0191-05 | WASHER NONMETAL | | | |
| | N30-3008-46 | SCREW, PAN HD | M 3X8 | | |
| | R92-0150-05 | JUMPING RES. | ZERO OHM | | |
| | 002-0001-05 | BRAIDED WIRE | | | |
| | 212-1018-05 | TUBE (PLASTIC) | | | |
| | 212-3013-05 | TUBE (PLASTIC) | | | |
| C001 | CC45CH1H330J | CAP. CERAMIC | 33P | 5% | 50V |
| C002 | CC45CH2H010C | CAP. CERAMIC | 1P | 0.25% | 500V |
| C003 | CK45B2H472K | CAP. CERAMIC | 4700P | 10% | 500V |
| C004 | CE04W1H100M | CAP. ELECTRO | 10 | 20% | 50V |
| C005 | CE04W2E100 | CAP. ELECTRO | 10 | | 250V |
| C006 | CQ93FM1H104K | CAP. MYLAR | 0.1 | 10% | 50V |
| C007 | CQ93FM1H153K | CAP. MYLAR | 0.015 | 10% | 50V |
| C008 | CE04W1V471M | CAP. ELECTRO | 470 | 20% | 35V |
| C009 | CQ93FM1H104K | CAP. MYLAR | 0.1 | 10% | 50V |
| C010 | CQ93FM1H223K | CAP. MYLAR | 0.022 | 10% | 50V |
| C011 | CK45B2H102K | CAP. CERAMIC | 1000P | 10% | 500V |
| C012 | CK45E3F332P | CAP. CERAMIC | 3300P | | 3.1K |
| C013 | CK45E3F332P | CAP. CERAMIC | 3300P | | 3.1K |
| C014 | NO USE | | | | |
| C015 | CE04W2E010 | CAP. ELECTRO | 1 | | 250V |
| C016 | CE04W2E4R7 | CAP. ELECTRO | 4.7 | | 250V |
| C017 | CK45B2H472K | CAP. CERAMIC | 4700P | 10% | 500V |
| C018 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C019 | CC45FCH1H100D | CAP. CERAMIC | 10P | 0.5P | 50V |
| C020 | CE04W1E101M | CAP. ELECTRO | 100 | 20% | 25V |
| C021 | CK45B2H103K | CAP. CERAMIC | 0.01 | 10% | 500V |
| C022 | CE04W1E101M | CAP. ELECTRO | 100 | 20% | 25V |
| C023 | CE04W1E101M | CAP. ELECTRO | 100 | 20% | 25V |
| C024 | C90-0912-05 | CAP. ELECTRO | 220 | 20% | 35V |
| C025 | C90-0912-05 | CAP. ELECTRO | 220 | 20% | 35V |
| C026 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C027 | CK45B2H472K | CAP. CERAMIC | 4700P | 10% | 500V |
| C028 | CE04W2A3R3M | CAP. ELECTRO | 3.3 | 20% | 100V |
| C029 | C91-0570-05 | CAP. CERAMIC | 4700P | | 3KV |
| C030 | CK45E3F102P | CAP. CERAMIC | 1000P | | 3.1K |
| C031 | CC45CH1H180J | CAP. CERAMIC | 18P | 5% | 50V |
| C101 | CQ93FM1H103K | CAP. MYLAR | 0.01 | 10% | 50V |
| C102 | CQ93FM1H103K | CAP. MYLAR | 0.01 | 10% | 50V |
| C103 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C104 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C105 | CC45CH1H221J | CAP. CERAMIC | 220P | 5% | 50V |
| C106 | CE04W1H100M | CAP. ELECTRO | 10 | 20% | 50V |
| C107 | NO USE | | | | |
| C108 | C90-0298-05 | CAP. CERAMIC | 0.1 | 20% | 12V |
| C109 | CK45B1H472K | CAP. CERAMIC | 4700P | 10% | 50V |
| C110 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C111 | CC45CH1H101J | CAP. CERAMIC | 100P | 5% | 50V |
| C112 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C113 | CC45CH1H101J | CAP. CERAMIC | 100P | 5% | 50V |
| C114 | CE04BW1H010M | CAP. ELECTRO | 1 | 20% | 50V |
| C115 | CE04W1A101M | CAP. ELECTRO | 100 | 20% | 10V |
| C116 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C117 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C118 | CC45CH2H100D | CAP. CERAMIC | 10P | 0.5P | 500V |
| C119 | CC45CH2H100D | CAP. CERAMIC | 10P | 0.5P | 500V |
| C120 | CF93AN2A105J | CAP. POLYESTHEL | 1 | 5% | 100V |
| C121 | CQ93BP2A103F | CAP. MYLAR | 0.01 | 1% | 100V |
| C122 | CM93BD2A900J | CAP. MICA | 90P | 5% | 100V |
| C123 | CQ93FM1H102K | CAP. MYLAR | 1000P | 10% | 50V |
| C124 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C125 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C126 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C127 | NO USE | | | | |
| C128 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C129 | CE04W1H010M | CAP. ELECTRO | 1 | 20% | 50V |
| C130 | NO USE | | | | |
| C131 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C132 | NO USE | | | | |
| C133 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C134 | CC45FCH1H470J | CAP. CERAMIC | 47P | 5% | 50V |
| C135 | CC45CH2H030C | CAP. CERAMIC | 3P | 0.25P | 500V |
| C136 | CM93BD2A151J | CAP. MICA | 150P | 5% | 100V |
| C139 | CC45CH2H020C | CAP. CERAMIC | 2P | 0.25P | 500V |
| C140 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C141 | CK45FB1H102K | CAP. CERAMIC | 1000P | 10% | 50V |
| C142 | CC45CH1H221J | CAP. CERAMIC | 220P | 5% | 50V |
| C143 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C144 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C145 | C90-0298-05 | CAP. CERAMIC | 0.1 | 20% | 12V |
| C146 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C147 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C148 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C149 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C150 | CE04W1E101M | CAP. ELECTRO | 100 | 20% | 25V |
| C151 | CE04W1A221M | CAP. ELECTRO | 220 | 20% | 10V |
| C152 | CE04W1E101M | CAP. ELECTRO | 100 | 20% | 25V |
| C153 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C154 | CE04W2E4R7 | CAP. ELECTRO | 4.7 | | 250V |
| C155 | CK45B2H472K | CAP. CERAMIC | 4700P | 10% | 500V |
| C158 | CC45FCH1H150J | CAP. CERAMIC | 15P | 5% | 50V |
| C159 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C160 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C161 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C162 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C163 | CC45FCH1H100D | CAP. CERAMIC | 10P | 0.5P | 50V |
| C164 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C165 | CC45CH1H151J | CAP. CERAMIC | 150P | 5% | 50V |
| C166 | NO USE | | | | |
| C167 | CC45CH1H221J | CAP. CERAMIC | 220P | 5% | 50V |
| C168 | CE04W1E101M | CAP. ELECTRO | 100 | 20% | 25V |
| C173 | C90-0298-05 | CAP. CERAMIC | 0.1 | 20% | 12V |
| C174 | C90-0298-05 | CAP. CERAMIC | 0.1 | 20% | 12V |
| C175 | NO USE | | | | |
| C176 | CK45B1H152K | CAP. CERAMIC | 1500P | 10% | 50V |
| D001 | DS442X | DIODE, SILICON | SWITCHING | | |
| D002 | DS442X | DIODE, SILICON | SWITCHING | | |
| D003 | W02-0409-05 | HIGH VOLTAGE POWER BLOCK | | | |
| D004 | W06C | DIODE | | | |
| D005 | W06C | DIODE | | | |
| D006 | 1SS83 | DIODE | | | |
| D007 | 1SS83 | DIODE | | | |
| D008 | DS442X | DIODE, SILICON | SWITCHING | | |
| D009 | DS442X | DIODE, SILICON | SWITCHING | | |
| D101 | DS442X | DIODE, SILICON | SWITCHING | | |
| D102 | NO USE | | | | |
| D103 | DS442X | DIODE, SILICON | SWITCHING | | |
| D104 | DS442X | DIODE, SILICON | SWITCHING | | |
| D105 | DS442X | DIODE, SILICON | SWITCHING | | |
| D106 | DS442X | DIODE, SILICON | SWITCHING | | |
| D107 | DS442X | DIODE, SILICON | SWITCHING | | |
| D108 | DS442X | DIODE, SILICON | SWITCHING | | |
| D109 | DS442X | DIODE, SILICON | SWITCHING | | |
| D110 | DS442X | DIODE, SILICON | SWITCHING | | |
| D111 | DS442X | DIODE, SILICON | SWITCHING | | |
| D112 | DS442X | DIODE | | | |
| D113 | DS442X | DIODE | | | |
| D114 | NO USE | | | | |
| D115 | DS442X | DIODE | | | |
| D116 | 1SS83 | DIODE | | | |
| D117 | MTZ5.1JB | DIODE ZENER | 5V | | |
| D121 | DS442X | DIODE, SILICON | SWITCHING | | |
| D122 | NO USE | | | | |
| D123 | 1SS83 | DIODE | | | |
| D124 | DS442X | DIODE | | | |
| D125 | DS442X | DIODE | | | |
| L001 | L40-1011-13 | FERRI INDUCTOR | 100UH | | |
| L002 | L40-1011-13 | FERRI INDUCTOR | 100UH | | |
| L003 | L40-1021-03 | FERRI INDUCTOR | 1MH | | |
| L004 | L40-1021-13 | FERRI INDUCTOR | 1MH | | |

# PARTS LIST

| REF.NO | PARTS NO | NAME & DESCRIPTION |
|---|---|---|
| L005 | L40-1021-13 | FERRI INDUCTOR 1MH |
| L006 | L40-1021-13 | FERRI INDUCTOR 1MH |
| L007 | L40-1021-13 | FERRI INDUCTOR 1MH |
| L008 | L40-4791-02 | FERRI INDUCTOR 4.7UH |
| L101 | L40-1011-13 | FERRI INDUCTOR 100UH |
| NL001 | NE-2B | NEON LAMP |
| NL002 | NE-2B | NEON LAMP |
| P001 | E40-0274-05 | PIN CONNECTOR 2 P |
| P002 | E40-0374-05 | PIN CONNECTOR 3 P |
| P003 | E40-0335-05 | PIN CONNECTOR 3 P |
| P004 | E40-0535-05 | PIN CONNECTOR 5 P |
| P005 | E40-0233-05 | PIN CONNECTOR 2 P |
| P101 | E40-1116-05 | PIN CONNECTOR 11 P |
| P102 | E40-1116-05 | PIN CONNECTOR 11 P |
| P103 | E40-0273-05 | PIN CONNECTOR 2 P |
| Q001 | 2SC2912(S) | TR. SI, NPN |
| Q002 | 2SA1210(S) | TR. SI, PNP |
| Q003 | 2SD613(E) | TR. SI, NPN |
| Q004 | 2SC2785(F) | TR. SI, NPN |
| Q005 | 2SC2271(D) | TR. SI, NPN |
| Q101 | 2SK117(Y) | FET |
| Q102 | 2SK117(Y) | FET |
| Q103 | 2SC2785(F) | TR. SI, NPN |
| Q104 | 2SC2785(F) | TR. SI, NPN |
| Q105 | 2SC2785(F) | TR. SI, NPN |
| Q106 | 2SC2785(F) | TR. SI, NPN |
| Q107 | 2SA1175(F) | TR. SI, PNP |
| Q108 | 2SA1175(F) | TR. SI, PNP |
| Q109 | 2SA838(C) | TR. SI, PNP |
| Q110 | 2SA838(C) | TR. SI, PNP |
| Q111 | 2SA1175(F) | TR. SI, PNP |
| Q112 | 2SA1175(F) | TR. SI, PNP |
| Q113 | 2SC2785(F) | TR. SI, NPN |
| Q114 | 2SC2785(F) | TR. SI, NPN |
| Q115 | 2SK117(Y) | FET |
| Q116 | 2SC2785(F) | TR. SI, NPN |
| Q117 | 2SC2785(F) | TR. SI, NPN |
| Q118 | 2SC2785(F) | TR. SI, NPN |
| Q119 | 2SC2785(F) | TR. SI, NPN |
| Q120 | 2SC2785(F) | TR. SI, NPN |
| Q121 | 2SA1175(F) | TR. SI, PNP |
| Q122 | 2SA1175(F) | TR. SI, PNP |
| Q123 | 2SA1175(F) | TR. SI, PNP |
| Q124 | 2SC2912(S) | TR. SI, NPN |
| Q125 | 2SA1210(S) | TR. SI, PNP |
| Q126 | 2SC2785(F) | TR. SI, NPN |
| Q127 | 2SC2912(S) | TR. SI, NPN |
| Q128 | 2SC2785(F) | TR. SI, NPN |
| Q129 | 2SC2785(F) | TR. SI, NPN |
| R001 | RN14BK2E4701F | RES. METAL FILM 4.7K 1% 1/4W |
| R002 | RD14BB2E221J | RES. CARBON 220 5% 1/4W |
| R003 | RD14BB2E183J | RES. CARBON 18K 5% 1/4W |
| R004 | RD14BB2E104J | RES. CARBON 100K 5% 1/4W |
| R005 | RN14BK2E4702F | RES. METAL FILM 47K 1% 1/4W |
| R006 | RD14BB2E101J | RES. CARBON 100 5% 1/4W |
| R007 | RN14BK2E2403F | RES. METAL FILM 240K 1% 1/4W |
| R008 | RD14BB2E102J | RES. CARBON 1K 5% 1/4W |
| R009 | RD14BB2E104J | RES. CARBON 100K 5% 1/4W |
| R010 | RD14BB2E332J | RES. CARBON 3.3K 5% 1/4W |
| R011 | RD14BB2E221J | RES. CARBON 220 5% 1/4W |
| R012 | RD14BB2E103J | RES. CARBON 10K 5% 1/4W |
| R013 | R92-1033-05 | RES. FIXED 33M 5% 1/4W |
| R014 | RD14BB2E334J | RES. CARBON 330K 5% 1/4W |
| R015 | R92-1034-05 | RES. METAL FILM 47M 5% 1/2W |
| R016 | R92-1026-05 | RES. METAL FILM 3.3M |
| R017 | R92-1032-05 | RES. FIXED 22M |
| R018 | RD14BB2E473J | RES. CARBON 47K 5% 1/4W |
| R019 | RD14BB2E393J | RES. CARBON 39K 5% 1/4W |
| R020 | RD14BB2E333J | RES. CARBON 33K 5% 1/4W |
| R021 | RD14BB2E473J | RES. CARBON 47K 5% 1/4W |
| R022 | RD14BB2E103J | RES. CARBON 10K 5% 1/4W |
| R023 | RD14BB2E222J | RES. CARBON 2.2K 5% 1/4W |
| R024 | RN14BK2E6800F | RES. METAL FILM 680 1% 1/4W |
| R025 | RN14BK2E2402F | RES. METAL FILM 24K 1% 1/4W |
| R026 | RN14BK2E1302F | RES. METAL FILM 13K 1% 1/4W |
| R027 | RD14BB2E102J | RES. CARBON 1K 5% 1/4W |
| R028 | RD14BB2E562J | RES. CARBON 5.6K 5% 1/4W |
| R029 | RD14BB2E4R7J | RES. CARBON 4.7 5% 1/4W |
| R030 | NO USE | |
| R031 | RD14BB2E470J | RES. CARBON 47 5% 1/4W |
| R032 | RD14BB2E224J | RES. CARBON 220K 5% 1/4W |
| R033 | RD14BB2E563J | RES. CARBON 56K 5% 1/4W |
| R101 | RN14BK2E1004F | RES. METAL FILM 1M 1% 1/4W |
| R102 | RD14BB2E104J | RES. CARBON 100K 5% 1/4W |
| R103 | RD14BB2E153J | RES. CARBON 15K 5% 1/4W |
| R104 | RD14BB2E153J | RES. CARBON 15K 5% 1/4W |
| R105 | RD14BB2E201J | RES. CARBON 200 5% 1/4W |
| R106 | RD14BB2E302J | RES. CARBON 3K 5% 1/4W |

| REF.NO | PARTS NO | NAME & DESCRIPTION |
|---|---|---|
| R107 | RN14BK2E3301F | RES. METAL FILM 3.3K 1% 1/4W |
| R108 | RN14BK2E3300F | RES. METAL FILM 330 1% 1/4W |
| R109 | RN14BK2E3600F | RES. METAL FILM 360 1% 1/4W |
| R110 | RN14BK2E4701F | RES. METAL FILM 4.7K 1% 1/4W |
| R111 | RN14BK2E5101F | RES. METAL FILM 5.1K 1% 1/4W |
| R112 | RD14BB2E103J | RES. CARBON 10K 5% 1/4W |
| R113 | RD14BB2E183J | RES. CARBON 18K 5% 1/4W |
| R114 | RD14BB2E222J | RES. CARBON 2.2K 5% 1/4W |
| R115 | RD14BB2E222J | RES. CARBON 2.2K 5% 1/4W |
| R116 | RD14BB2E222J | RES. CARBON 2.2K 5% 1/4W |
| R117 | RD14BB2E472J | RES. CARBON 4.7K 5% 1/4W |
| R118 | RD14BB2E105J | RES. CARBON 1M 5% 1/4W |
| R119 | RD14BB2E622J | RES. CARBON 6.2K 5% 1/4W |
| R120 | RD14BB2E102J | RES. CARBON 1K 5% 1/4W |
| R121 | RD14BB2E472J | RES. CARBON 4.7K 5% 1/4W |
| R122 | RN14BK2E2701F | RES. METAL FILM 2.7K 1% 1/4W |
| R123 | RN14BK2E3600F | RES. METAL FILM 360 1% 1/4W |
| R124 | RN14BK2E3600F | RES. METAL FILM 360 1% 1/4W |
| R125 | RD14BB2E102J | RES. CARBON 1K 5% 1/4W |
| R126 | RN14BK2E1002F | RES. METAL FILM 10K 1% 1/4W |
| R127 | RN14BK2E2701F | RES. METAL FILM 2.7K 1% 1/4W |
| R128 | RD14BB2E102J | RES. CARBON 1K 5% 1/4W |
| R129 | RD14BB2E561J | RES. CARBON 560 5% 1/4W |
| R130 | RD14BB2E182J | RES. CARBON 1.8K 5% 1/4W |
| R131 | RD14BB2E681J | RES. CARBON 680 5% 1/4W |
| R132 | RD14BB2E472J | RES. CARBON 4.7K 5% 1/4W |
| R133 | RD14BB2E222J | RES. CARBON 2.2K 5% 1/4W |
| R134 | RD14BB2E102J | RES. CARBON 1K 5% 1/4W |
| R135 | RD14BB2E472J | RES. CARBON 4.7K 5% 1/4W |
| R136 | RD14BB2E222J | RES. CARBON 2.2K 5% 1/4W |
| R137 | RD14BB2E102J | RES. CARBON 1K 5% 1/4W |
| R138 | RD14BB2E102J | RES. CARBON 1K 5% 1/4W |
| R139 | RD14BB2E562J | RES. CARBON 5.6K 5% 1/4W |
| R140 | RD14BB2E221J | RES. CARBON 220 5% 1/4W |
| R141 | RD14BB2E221J | RES. CARBON 220 5% 1/4W |
| R142 | RD14BB2C220J | RES. CARBON 22 5% 1/6W |
| R143 | RD14BB2E472J | RES. CARBON 4.7K 5% 1/4W |
| R144 | RD14BB2E103J | RES. CARBON 10K 5% 1/4W |
| R145 | RD14BB2E182J | RES. CARBON 1.8K 5% 1/4W |
| R146 | RD14BB2E472J | RES. CARBON 4.7K 5% 1/4W |
| R147 | RN14BK2E3302F | RES. METAL FILM 33K 1% 1/4W |
| R148 | RD14BB2E102J | RES. CARBON 1K 5% 1/4W |
| R149 | RN14BK2E3602F | RES. METAL FILM 36K 1% 1/4W |
| R150 | RS14GB3D183J | RES. METAL FILM 18K 5% 2W |
| R151 | RD14BB2E102J | RES. CARBON 1K 5% 1/4W |
| R152 | RD14BB2E153J | RES. CARBON 15K 5% 1/4W |
| R153 | RD14BB2E153J | RES. CARBON 15K 5% 1/4W |
| R154 | RD14BB2E133J | RES. CARBON 13K 5% 1/4W |
| R155 | RD14BB2C132J | RES. CARBON 1.3K 5% 1/6W |
| R156 | RN14BK2E1201F | RES. METAL FILM 1.2K 1% 1/4W |
| R157 | RN14BK2E1201F | RES. METAL FILM 1.2K 1% 1/4W |
| R158 | RN14BK2E4301F | RES. METAL FILM 4.3K 1% 1/4W |
| R159 | RN14BK2E9101F | RES. METAL FILM 9.1K 1% 1/4W |
| R160 | RN14BK2E3004F | RES. METAL FILM 3M 1% 1/4W |
| R161 | RN14BK2E1004F | RES. METAL FILM 1M 1% 1/4W |
| R162 | RN14BK2E5003F | RES. METAL FILM 500K 1% 1/4W |
| R163 | RN14BK2E3003F | RES. METAL FILM 300K 1% 1/4W |
| R164 | RN14BK2E1003F | RES. METAL FILM 100K 1% 1/4W |
| R165 | RN14BK2E5002F | RES. METAL FILM 50K 1% 1/4W |
| R166 | RN14BK2E3002F | RES. METAL FILM 30K 1% 1/4W |
| R167 | RN14BK2E2002F | RES. METAL FILM 20K 1% 1/4W |
| R168 | RD14BB2E472J | RES. CARBON 4.7K 5% 1/4W |
| R169 | RD14BB2E222J | RES. CARBON 2.2K 5% 1/4W |
| R170 | RD14BB2E472J | RES. CARBON 4.7K 5% 1/4W |
| R171 | RN14BK2E4701F | RES. METAL FILM 4.7K 1% 1/4W |
| R172 | RD14BB2E472J | RES. CARBON 4.7K 5% 1/4W |
| R173 | RD14BB2E101J | RES. CARBON 100 5% 1/4W |
| R174 | RD14BB2E391J | RES. CARBON 390 5% 1/4W |
| R175 | RN14BK2E2201F | RES. METAL FILM 2.2K 1% 1/4W |
| R176 | RN14BK2E2201F | RES. METAL FILM 2.2K 1% 1/4W |
| R177 | RD14BB2E182J | RES. CARBON 1.8K 5% 1/4W |
| R178 | RD14BB2E182J | RES. CARBON 1.8K 5% 1/4W |
| R179 | RD14BB2E103J | RES. CARBON 10K 5% 1/4W |
| R180 | RN14BK2E1202F | RES. METAL FILM 12K 1% 1/4W |
| R181 | RD14BB2E822J | RES. CARBON 8.2K 5% 1/4W |
| R182 | RD14BB2E103J | RES. CARBON 10K 5% 1/4W |
| R183 | RD14BB2E124J | RES. CARBON 120K 5% 1/4W |
| R184 | RD14BB2E621J | RES. CARBON 620 5% 1/4W |
| R185 | RD14BB2E102J | RES. CARBON 1K 5% 1/4W |
| R186 | RD14BB2E473J | RES. CARBON 47K 5% 1/4W |
| R187 | RD14BB2E203J | RES. CARBON 20K 5% 1/4W |
| R188 | RD14BB2E103J | RES. CARBON 10K 5% 1/4W |
| R189 | RD14BB2E102J | RES. CARBON 1K 5% 1/4W |
| R190 | RS14GB3D103J | RES. METAL FILM 10K 5% 2W |
| R191 | RD14BB2E124J | RES. CARBON 120K 5% 1/4W |
| R192 | RD14BB2E103J | RES. CARBON 10K 5% 1/4W |
| R193 | RD14BB2E122J | RES. CARBON 1.2K 5% 1/4W |
| R194 | RD14BB2E122J | RES. CARBON 1.2K 5% 1/4W |
| R195 | RD14BB2E821J | RES. CARBON 820 5% 1/4W |
| R196 | RD14BB2E821J | RES. CARBON 820 5% 1/4W |
| R197 | NO USE | |
| R198 | RD14BB2E222J | RES. CARBON 2.2K 5% 1/4W |
| R199 | RD14BB2E221J | RES. CARBON 220 5% 1/4W |
| R205 | RD14BB2E102J | RES. CARBON 1K 5% 1/4W |
| R206 | NO USE | |
| R207 | RN14BK2E9101F | RES. METAL FILM 9.1K 1% 1/4W |

# PARTS LIST

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| R210 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R211 | RD14BB2E470J | RES. CARBON | 47 | 5% | 1/4W |
| R212 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R213 | RD14BB2E152J | RES. CARBON | 1.5K | 5% | 1/4W |
| R214 | RN14BK2E5101F | RES. METAL FILM | 5.1K | 1% | 1/4W |
| R217 | RD14BB2E562J | RES. CARBON | 5.6K | 5% | 1/4W |
| R221 | RD14BB2E133J | RES. CARBON | 13K | 5% | 1/4W |
| R222 | RD14BB2C102J | RES. CARBON | 1K | 5% | 1/6W |
| R223 | RD14BB2E103J | RES. CARBON | 10K | 5% | 1/4W |
| R224 | NO USE | | | | |
| R225 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R226 | NO USE | | | | |
| R227 | RD14BB2C102J | RES. CARBON | 1K | 5% | 1/6W |
| R228 | RD14BB2C133J | RES. CARBON | 13K | 5% | 1/6W |
| S103 | S02-2507-15 | ROTARY SW. W/V.R2K B | | | |
| S104 | S33-2501-05 | LEVER SWITCH | | | |
| S105 | S32-2012-05 | LEVER SWITCH | | | |
| S106 | S32-4007-05 | LEVER SWITCH | | | |
| T001 | L19-0413-05 | CONVERTOR TRANSFORMER | | | |
| TC101 | C05-0422-05 | CAP. TRIMMER | 20P | | |
| TC102 | C05-0420-05 | CAP. TRIMMER | 6P | | |
| U001 | NJM4558D | IC | | | |
| U101 | MC10103L | IC, QUAD 2-INPUT OR GATE | | | |
| U102 | SN74LS112N | IC | | | |
| U103 | SN74LS02N | IC | | | |
| U104 | SN74LS00N | IC | | | |
| U105 | SN74LS08N | IC | | | |
| VR001 | R12-5516-05 | RES. SEMI FIXED 100K B | | | |
| VR101 | R01-3510-05 | V.R. WITH SW. | 10K B | | |
| VR102 | R01-3510-05 | V.R. WITH SW. | 10K B | | |
| VR103 | S02-2507-15 | ROTARY SW. W/V.R2K B | | | |
| VR104 | R12-3520-05 | RES. SEMI FIXED 10K B | | | |
| VR105 | R12-1518-05 | RES. SEMI FIXED 2K B | | | |
| VR106 | R12-0421-05 | RES. SEMI FIXED 100 B | | | |
| VR107 | R12-1517-05 | RES. SEMI FIXED 1K B | | | |
| VR108 | NO USE | | | | |
| VR109 | R12-5518-05 | RES. SEMI FIXED 200K B | | | |
| VR110 | NO USE | | | | |
| VR111 | R12-0540-05 | RES. SEMI FIXED 500 B | | | |

## V. FINAL AMP UNIT

### (X73-1630-00)

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| | F01-0821-04 | HEAT SINK | | | |
| | F02-0514-04 | HEAT SINK | | | |
| | J21-2950-04 | BRACKET FOR P.C.B | | | |
| | J21-2951-04 | BRACKET FOR P.C.B | | | |
| | J25-5097-04 | PCB (UNMOUNTED) | | | |
| | J32-0780-04 | BOSS | | | |
| | J61-0516-05 | SUPPORT (T TYPE) | | | |
| | N09-0709-05 | SCREW | | | |
| | N30-3004-46 | SCREW, PAN HD | M 3X4 | | |
| | N30-3006-46 | SCREW, PAN HD | M 3X6 | | |
| | N30-3008-46 | SCREW, PAN HD | M 3X8 | | |
| | R92-0150-05 | JUMPING RES. | ZERO OHM | | |
| C001 | CK45B2H472K | CAP. CERAMIC | 4700P | 10% | 500V |
| C002 | CE04W2C3R3 | CAP. ELECTRO | 3.3 | | 160V |
| C003 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |
| C004 | CE04W1E101M | CAP. ELECTRO | 100 | 20% | 25V |
| C005 | CK45B1H472K | CAP. CERAMIC | 4700P | 10% | 50V |
| C006 | CK45B1H472K | CAP. CERAMIC | 4700P | 10% | 50V |
| C007 | CK45B1H472K | CAP. CERAMIC | 4700P | 10% | 50V |
| C008 | CK45B1H472K | CAP. CERAMIC | 4700P | 10% | 50V |
| D001 | DS442X | DIODE | | | |
| D002 | DS442X | DIODE | | | |
| D003 | DS442X | DIODE | | | |
| D004 | DS442X | DIODE | | | |
| P001 | E40-0202-05 | PIN CONNECTOR | 2 P | | |
| P002 | E40-0202-05 | PIN CONNECTOR | 2 P | | |
| P003 | E40-0374-05 | PIN CONNECTOR | 3 P | | |
| P004 | E40-0274-05 | PIN CONNECTOR | 2 P | | |
| Q001 | 2SC2912(R,S) | TR. SI, NPN | | | |
| Q002 | 2SC2912(R,S) | TR. SI, NPN | | | |
| Q003 | 2SA1210(S) | TR. SI, PNP | | | |
| Q004 | 2SC2912(R,S) | TR. SI, NPN | | | |
| Q005 | 2SA1210(S) | TR. SI, PNP | | | |
| Q006 | 2SC2912(R,S) | TR. SI, NPN | | | |
| R001 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R002 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R003 | R92-1130-05 | RES. FIXED | 2.4K | | 3W |
| R004 | R92-1130-05 | RES. FIXED | 2.4K | | 3W |
| R005 | RD14BB2E470J | RES. CARBON | 47 | 5% | 1/4W |
| R006 | RD14BB2E470J | RES. CARBON | 47 | 5% | 1/4W |
| R007 | RD14BB2E470J | RES. CARBON | 47 | 5% | 1/4W |
| R008 | RD14BB2E470J | RES. CARBON | 47 | 5% | 1/4W |
| R009 | RD14BB2E150J | RES. CARBON | 15 | 5% | 1/4W |
| R010 | RD14BB2E150J | RES. CARBON | 15 | 5% | 1/4W |
| R011 | RD14BB2E150J | RES. CARBON | 15 | 5% | 1/4W |
| R012 | RD14BB2E150J | RES. CARBON | 15 | 5% | 1/4W |

## CONNECTION UNIT

### (X77-1261-61)

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| | E33-4037-00 | WIRE ASSY | | | |
| | J25-2995-03 | PCB (UNMOUNTED) | | | |
| | R92-0150-05 | JUMPING RES. | ZERO OHM | | |
| C001 | CQ93M1H103J | CAP. MYLAR | 0.01 | 5% | 50V |
| C002 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |
| D001 | DS442X | DIODE | | | |
| D002 | DS442X | DIODE | | | |
| P001 | E40-7203-05 | PIN CONNECTOR | 3 P | | |
| P002 | E40-7204-05 | PIN CONNECTOR | 4 P | | |
| P003 | E40-0604-05 | PIN CONNECTOR | 6 P | | |
| P004 | E40-0804-05 | PIN CONNECTOR | 8 P | | |
| P005 | E40-0804-05 | PIN CONNECTOR | 8 P | | |
| P006 | E40-1111-05 | PIN CONNECTOR | 11P | | |
| P007 | E40-1111-05 | PIN CONNECTOR | 11P | | |
| P008 | E40-1111-05 | PIN CONNECTOR | 11P | | |
| P009 | E40-1111-05 | PIN CONNECTOR | 11P | | |
| P010 | E40-0273-05 | PIN CONNECTOR | 2 P | | |
| P013 | E40-0273-05 | PIN CONNECTOR | 2 P | | |
| P014 | E40-0273-05 | PIN CONNECTOR | 2 P | | |
| P015 | E40-0673-05 | PIN CONNECTOR | 6 P | | |
| Q001 | 2SC1384 | TR. SI, NPN | | | |
| Q002 | 2SA684 | TR. SI, PNP | | | |
| R001 | RD14BB2E331J | RES. CARBON | 330 | 5% | 1/4W |
| R002 | RD14BB2E103J | RES. CARBON | 10K | 5% | 1/4W |
| R003 | RD14BB2E103J | RES. CARBON | 10K | 5% | 1/4W |
| R004 | RD14BB2E103J | RES. CARBON | 10K | 5% | 1/4W |
| R005 | RD14BB2E221J | RES. CARBON | 220 | 5% | 1/4W |
| R006 | RN14BK2E1300F | RES. METAL FILM | 130 | 1% | 1/4W |
| R007 | RN14BK2E4302F | RES. METAL FILM | 43K | 1% | 1/4W |
| R008 | RN14BK2E9102F | RES. METAL FILM | 91K | 1% | 1/4W |

# PARTS LIST

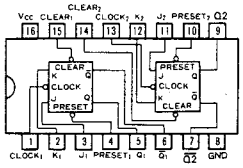
| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| R009 | RN14BK2E1003F | RES. METAL FILM | 100K | 1% | 1/4W |
| R010 | RN14BK2E3601F | RES. METAL FILM | 3.6K | 1% | 1/4W |
| R011 | RD14BB2E392J | RES. CARBON | 3.9K | 5% | 1/4W |
| R014 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R015 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| U001 | NJM4558D | IC | | | |

## CRT SOCKET UNIT

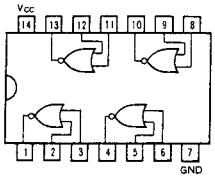
### (X81-1250-04)

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| | E01-0103-05 | CRT SOCKET | | | |
| | J25-2996-24 | PCB (UNMOUNTED) | | | |
| | R92-0150-05 | JUMPING RES. | ZERO OHM | | |
| C001 | CC45CH2H010C | CAP. CERAMIC | 1P | 0.25% | 500V |
| C002 | CC45SL1H050C | CAP. CERAMIC | 5P | 0.25P | 50V |
| J016 | E31-2390-15 | LEAD WIRE WITH CONNECTOR | | | |
| J017 | E31-2390-15 | LEAD WIRE WITH CONNECTOR | | | |
| J018 | NO USE | | | | |
| J019 | E31-2364-05 | LEAD WIRE WITH CONNECTOR | | | |
| J020 | NO USE | | | | |
| J021 | E31-2363-05 | LEAD WIRE WITH CONNECTOR | | | |
| J022 | NO USE | | | | |
| J023 | E31-2365-05 | LEAD WIRE WITH CONNECTOR | | | |

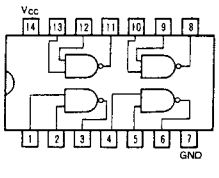
# SEMICONDUCTORS



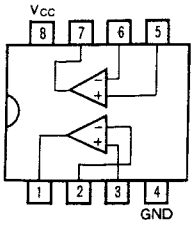

SN74LS112N



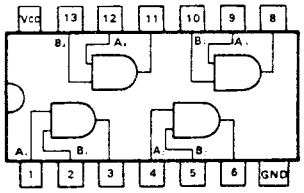

LS74LS02N



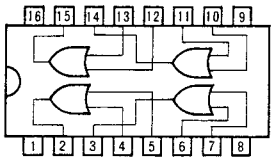

SN74LS00N



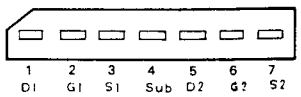

NJM4558D




SN74LS08N

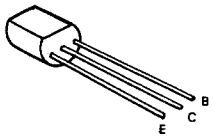



MC10103L

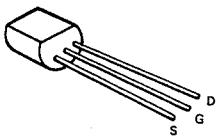



M47F(B)
M47F(C)

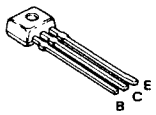
Bottom View



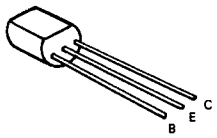

2SA684 2SC1384
2SA838 (C) 2SC2271 (D or E)
2SA1005 (K)



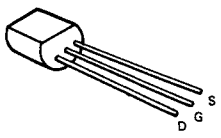

2SK30A (O)



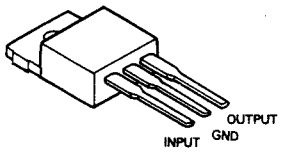

2SA1175 (F)
2SC2785 (F)
2SC2786 (K)



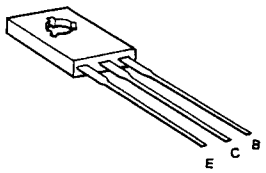

2SC2407



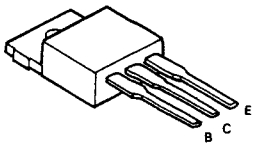

2SK117 (Y)



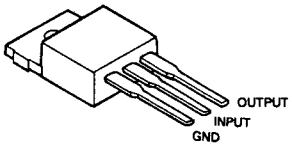

μPC7805H
NJM7815



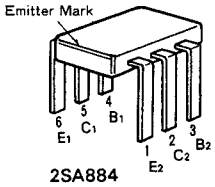

2SA1210 (R or S)
2SC2912 (R or S)




2SA1009 (L, K)
2SD613E

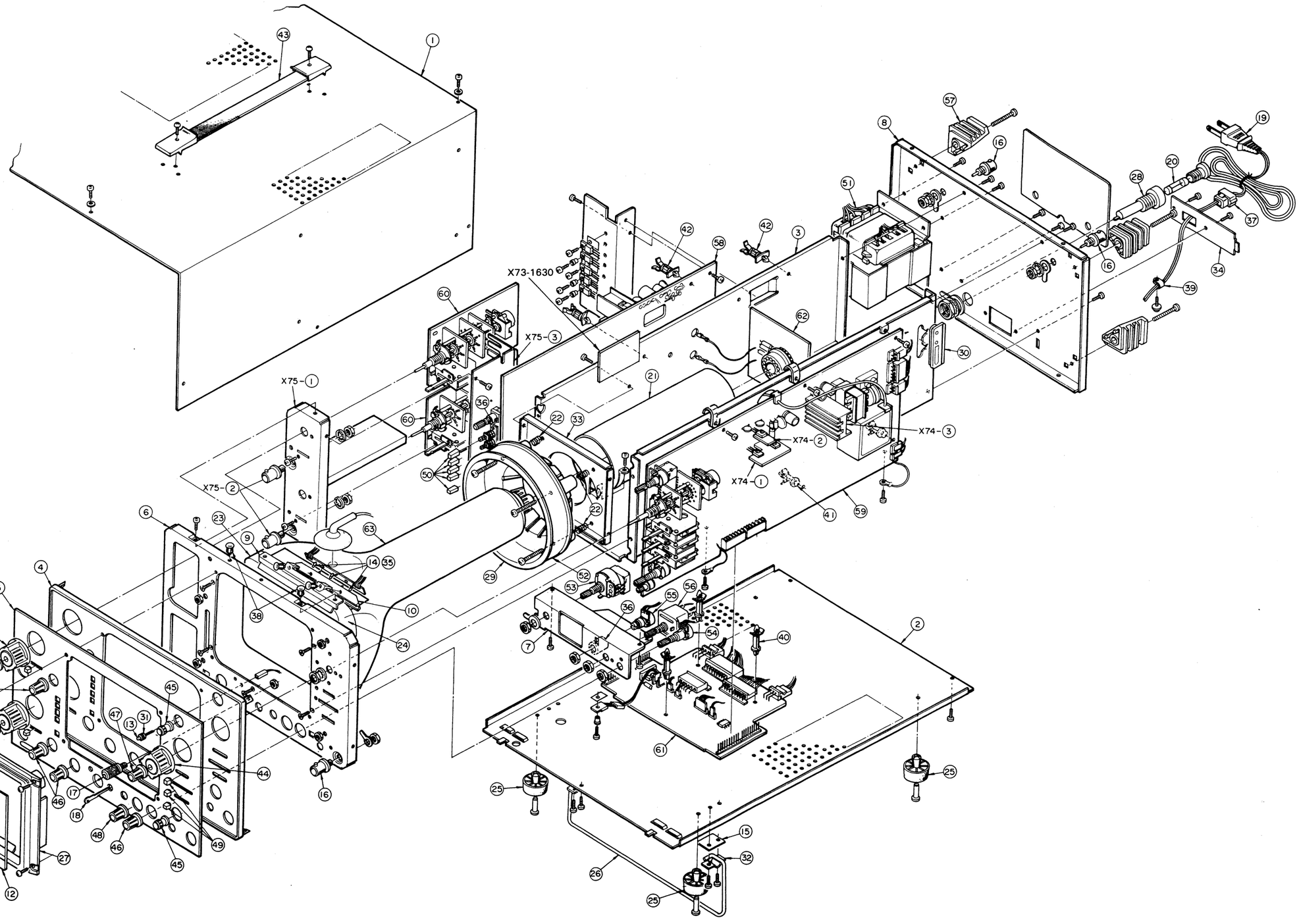



μPC7915HA



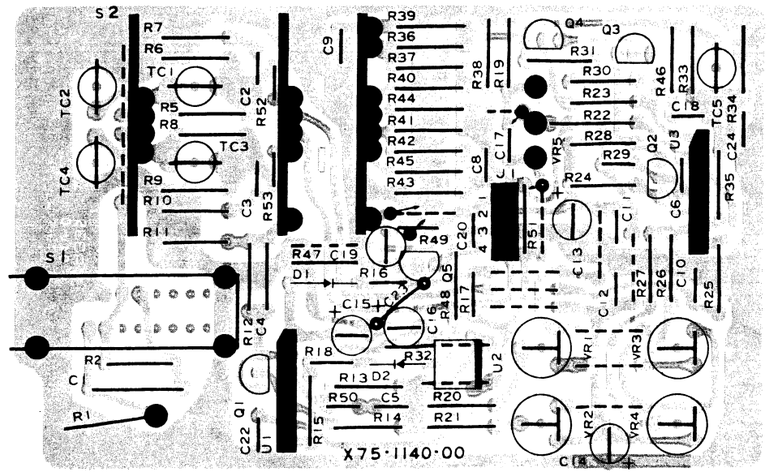

2SA884

# DISASSEMBLY

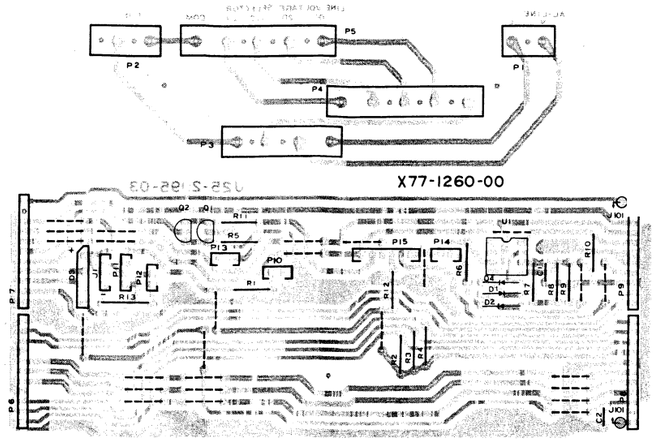


# P.C. BOARD

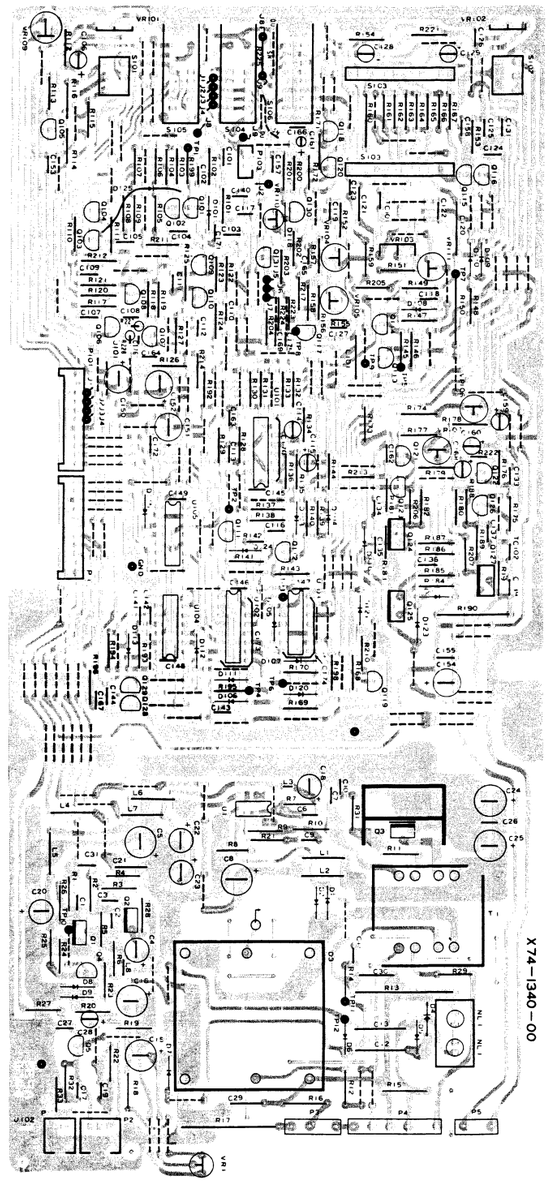
## VERTICAL ATTENUATOR UNIT (X75-1140-00)



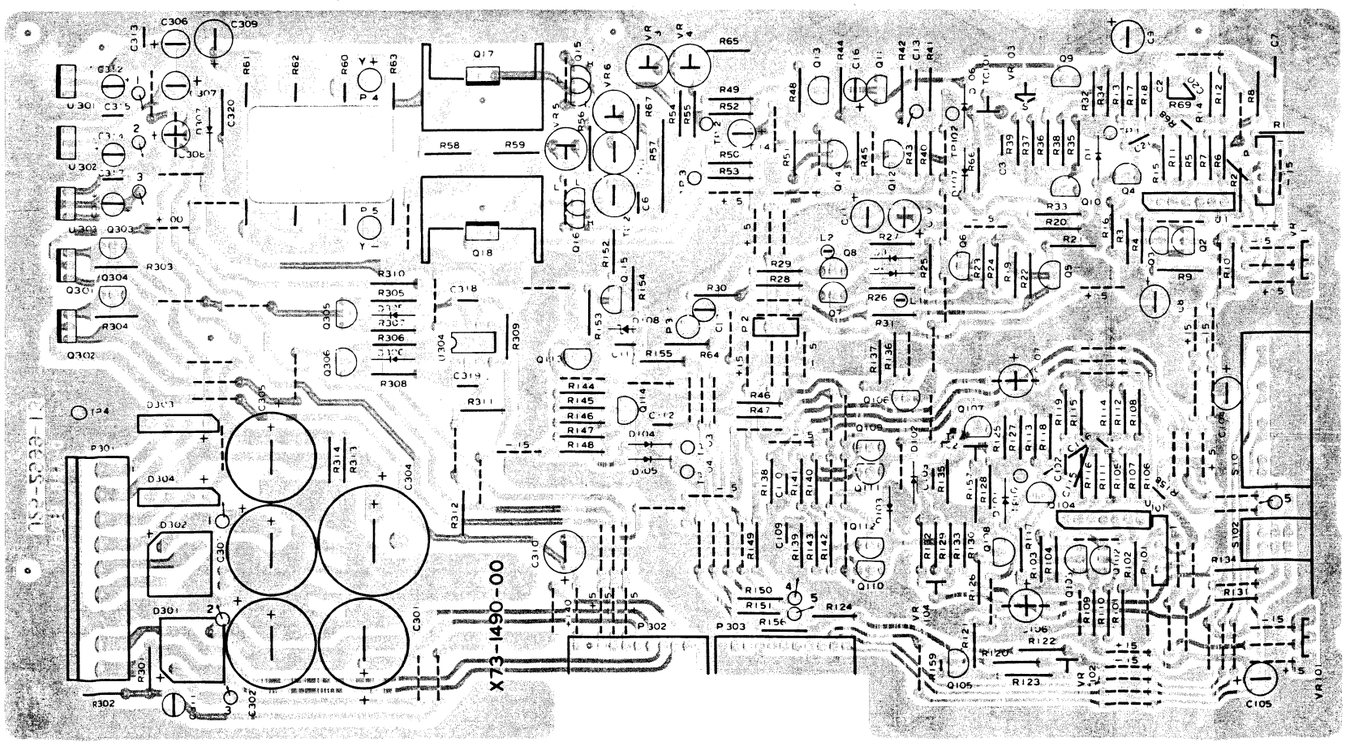

## CONNECTION UNIT (X77-1260-00)



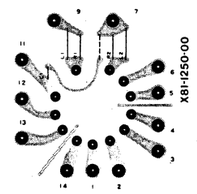

## HORIZONTAL & HIGH VOLTAGE UNIT (X74-1340-00)



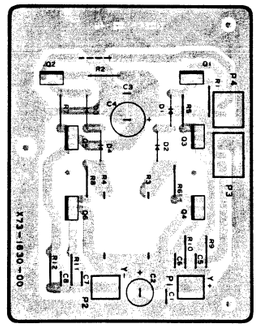

## VERTICAL AMP & POWER UNIT (X73-1490-00)



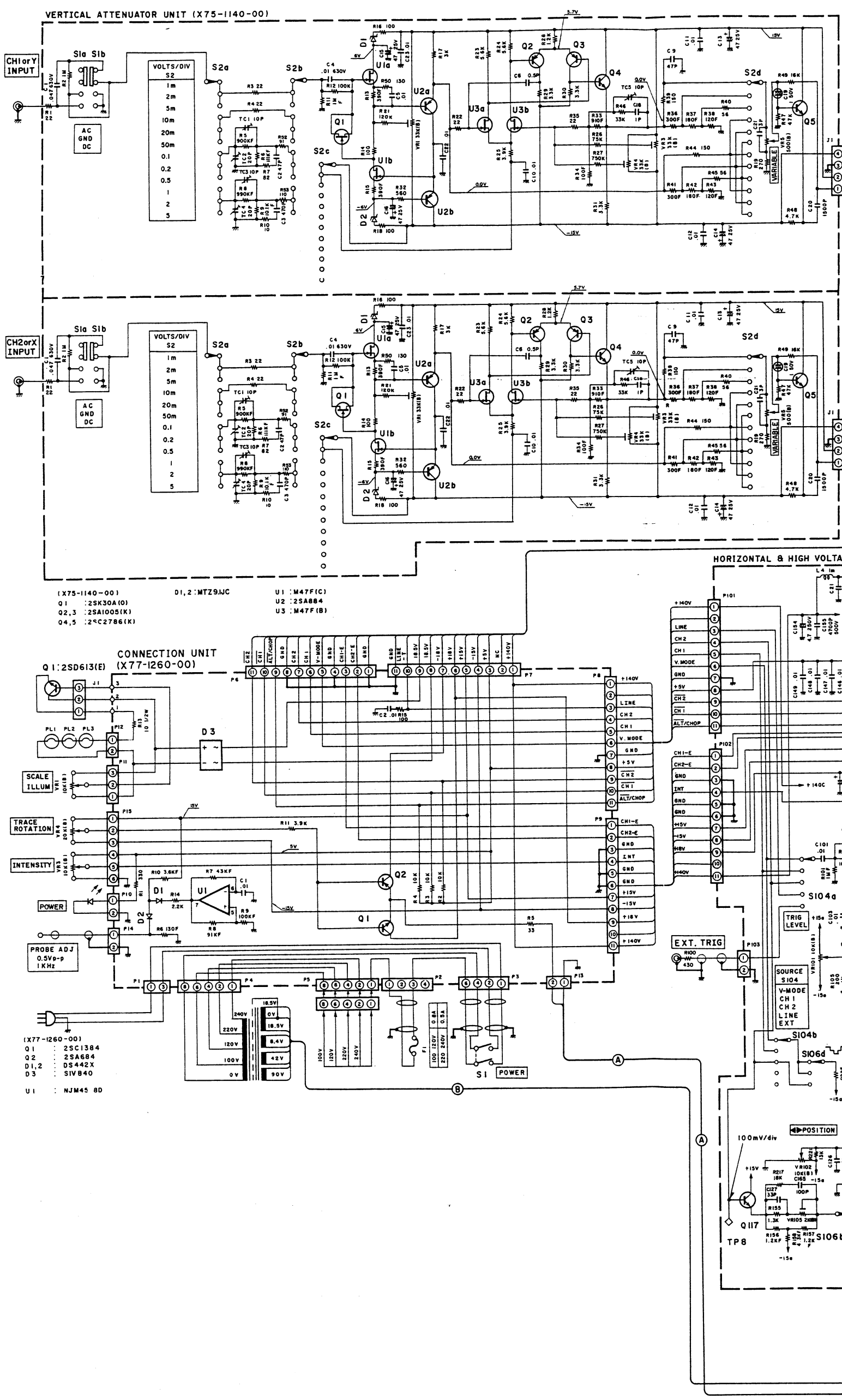

## CRT SOCKET UNIT (X81-1250-00)




## V. FINAL AMP UNIT (X73-1630-00)



# CS-1022 SCHEMATIC DIAGRAM



## VERTICAL AMP & POWER UNIT (X73-1490-00)

CH1 OUTPUT

10Vdc 100mV/div

63Vdc 2.5V/div

| | | | |
|---|---|---|---|
| Q2,3,8,102,103 | : 2SA1005(K) | D1~3,101~107,305,306 | : DS442X |
| Q4~7,9~14,104, 105,107~112,115 | : 2SC2786(K) | D301,302 | : S2V840F |
| | | D303,304 | : S1V860 |
| Q15,16 | : 2SC2407 | D307 | : V068 |
| Q17,18 | : 2SC2912(R,S) | U1,101 | : M47F(8) |
| Q106,114 | : 2SC2785(F) | U301 | : μPC7805H |
| Q113,303,304 | : 2SA1175(F) | U302 | : μPC7915HA |
| Q301,302 | : 2SA1009(L,K) | U303 | : NJM7815 |
| Q305,306 | : 2SC2271(E) | U304 | : NJM4558D |
| | | D108 | : MTZ10JC |

0Vdc 7mV/div

0Vdc 100mV/div

MODE

## UNIT (X74-1340-00)

W02-0408-05

CRT 150FTM31

CRT SOCKET UNIT (X81-1250-00)

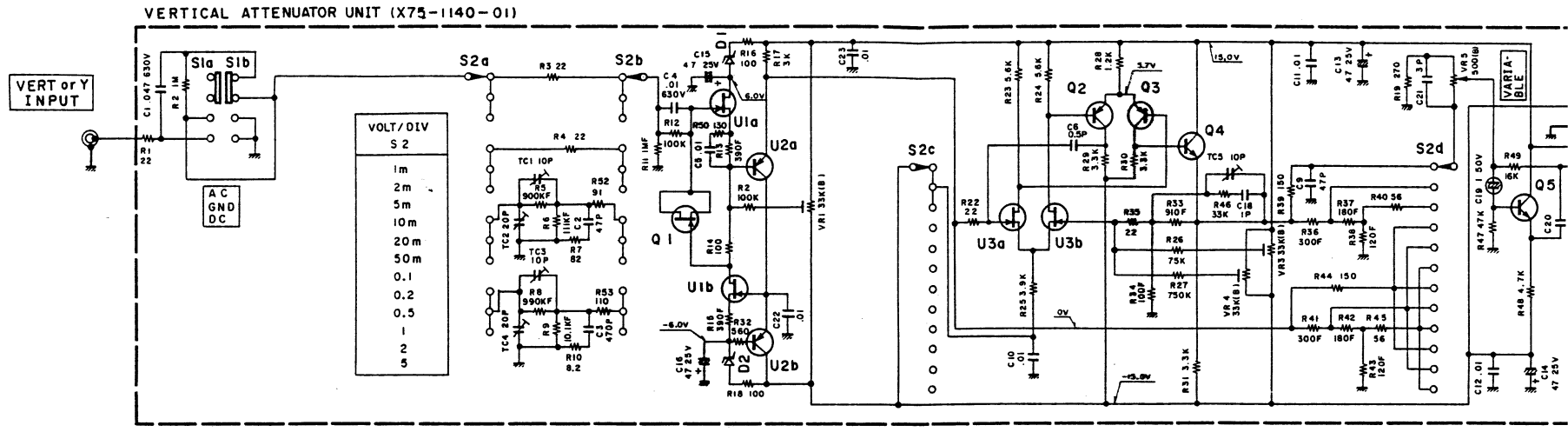
FOCUS

ASTIG

Z-AXIS

| | |
|---|---|
| (X74-1340-00) | |
| U1 | : NJM4558D |
| U101 | : MC10103L |
| U102 | : SN74LS112N |
| U103 | : SN74LS02N |
| U104 | : SN74LS00N |
| U105 | : SN74LS08N |
| Q1,124,127 | : 2SC2912(S) |
| Q2,125 | : 2SA1210(S) |
| Q3 | : 2SD613(E) |
| Q4,103~106,113,114,116~120,126,128,129 | : 2SC2785(F) |
| Q5 | : 2SC2271(D) |
| Q101,102,115 | : 2SK117(Y) |
| Q107,108,111,112,121~123 | : 2SA1175(F) |
| Q109,110 | : 2SA838(C) |
| NL1,2 | : NE-28 |
| D1,2,8,9,101,103~113,115,121,124,125 | : DS442X |
| D4,5 | : W06C |
| D6,7 | : 1SS83 |
| D117 | : MTZ5.1JB |

# CS-1020 SCHEMATIC DIAGRAM



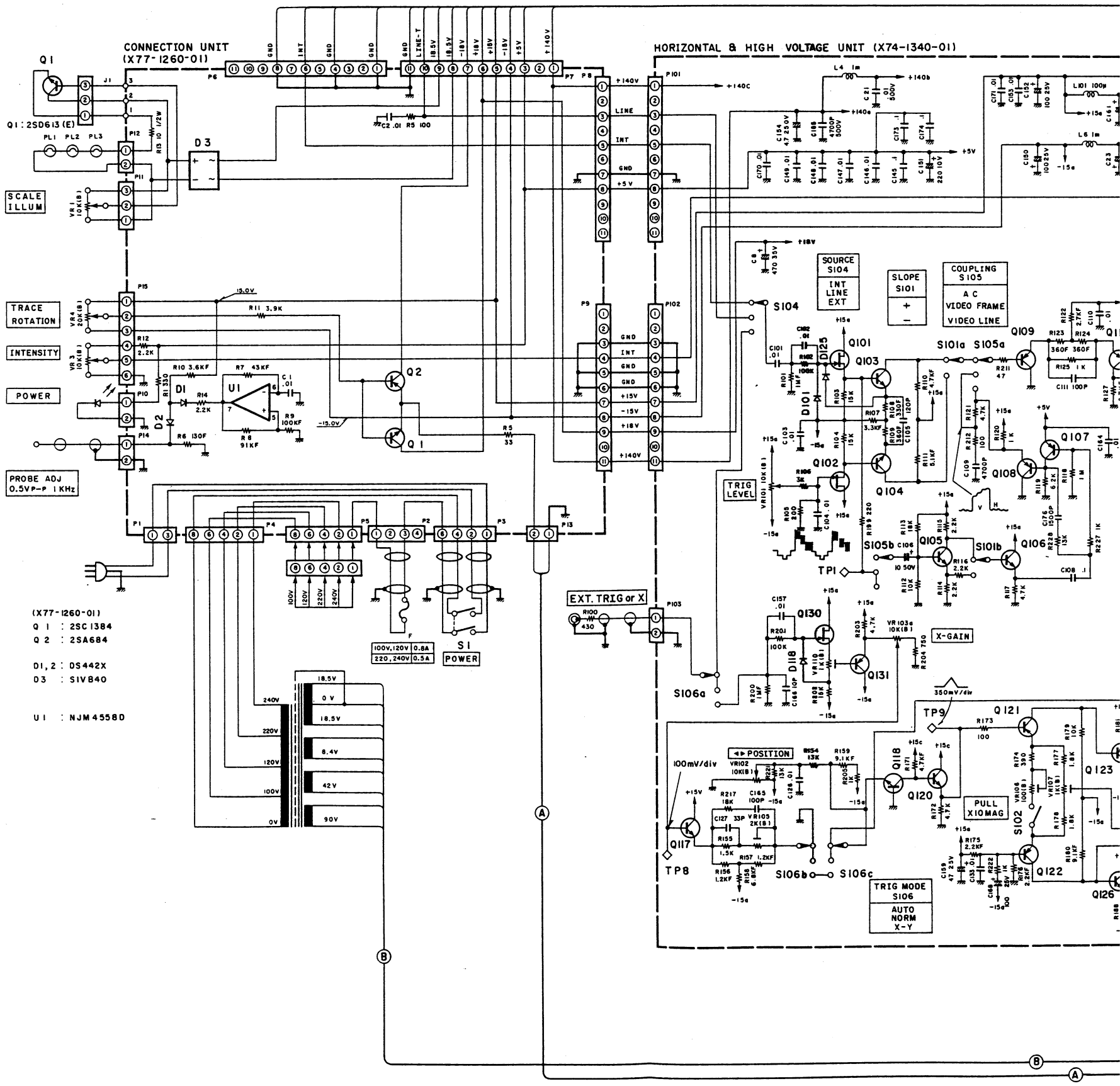

(X75-1140-01)
Q1 : 2SK30A(O)
Q2,3 : 2SA1005(K)
Q4,5 : 2SC2786(F)
U1 : M47F(C)
U2 : 2SA884
U3 : M47F(B)

D1,2 : MTZ9.1JC

(X73-1490-01)

| | | | |
|---|---|---|---|
| Q2,3,8 | : 2SA1005(K) | Q303,304 | : 2SA1175(F) |
| Q4~7,9~14 | : 2SC2786(K) | Q305,306 | : 2SC2271(E) |
| Q15,16 | : 2SC2407 | | |
| Q17,18 | : 2SC2912(R,S) | D1~3,305,306 | : DS442X |
| Q301,302 | : 2SA1009(L,K) | D301,302 | : S2V840F |
| | | D303,304 | : SIV860 |
| | | D307 | : V068 |

| | |
|---|---|
| U1 | : M47F(B |
| U301 | : μPC780 |
| U302 | : μPC791 |
| U303 | : NJM781 |
| U304 | : NJM455 |




(X77-1260-01)
Q1 : 2SC1384
Q2 : 2SA684

D1,2 : DS442X
D3 : SIV840

U1 : NJM4558D

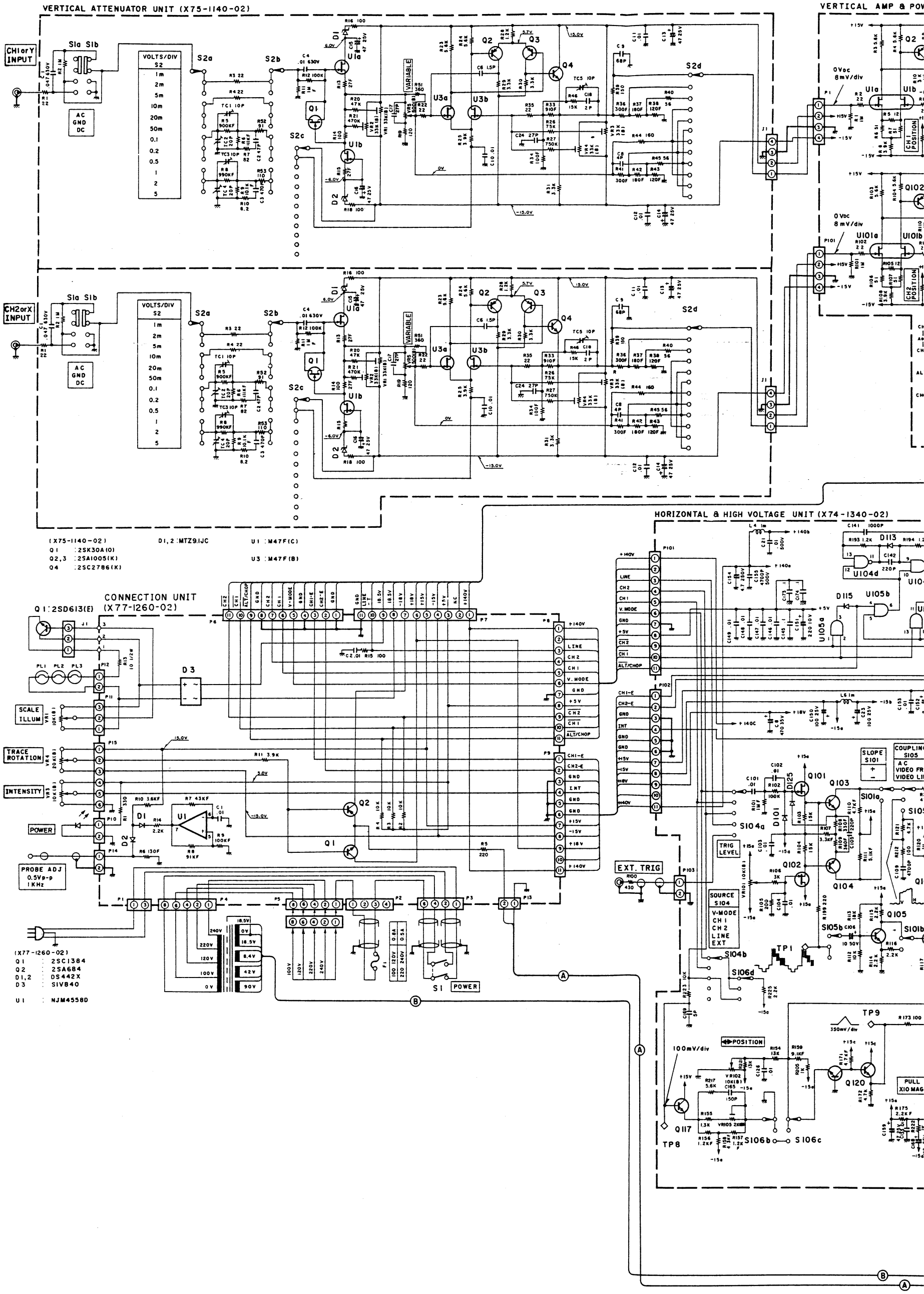
VERTICAL AMP & POWER UNIT (X73-1490-01)

| | | | |
|---|---|---|---|
| : 2SA1175 (F) | U1 | : | M47F(B1 |
| : 2SC2271(E) | U301 | : | μPC7805H |
| — | U302 | : | μPC7915HA |
| : DS442X | U303 | : | NJM7815 |
| : S2V840F | U304 | : | NJM4558D |
| : SIV860 | | | |
| : V068 | | | |

-011)

| | | | |
|---|---|---|---|
| (X74-1340-01) | | | |
| U1 | | : | NJM4558D |
| U101 | | : | MC10103L |
| U102 | | : | SN74LS112N |
| U103 | | : | SN74LS02N |
| Q1,124,127 | | : | 2SC2912(S) |
| Q2,125 | | : | 2SA1210(S) |
| Q3 | | : | 2SD613(E) |
| Q4,103~106,113,114, 116~120,126,128,129 | | : | 2SC2785(F) |
| Q5 | | : | 2SC2271(D) |
| Q101,102,115,130 | | : | 2SK117(Y) |
| Q107,108,111,112, 121~123,131 | | : | 2SA1175(F) |
| Q109,110 | | : | 2SA838(C) |
| D1,2,8,9,101,103~111, 118,120,121,124,125 | | : | DS442X |
| D4,5 | | : | WO6C |
| D6,7 | | : | 1SS83 |
| D117 | | : | MTZ5.1JB |
| NL1,2 | | : | NE-28 |

# CS-1012 SCHEMATIC DIAGRAM



VERTICAL AMP & POWER UNIT (X73-1490-02)

CH1 OUTPUT

63Vdc 5V/div

10Vdc 100mV/div

0Vdc 8mV/div

0Vdc 100mV/div

0Vdc 8mV/div

| | | | |
|---|---|---|---|
| | | D1~3, 101~107, 305, 306 | DS442X |
| Q2,3,8,102,103 | 2SA1005(K) | | |
| Q5~7,9~14,105~112, | | D301,302 | S2VB40F |
| 114,115 | 2SC2785(F) | D303,304 | SIV860 |
| Q15,16 | 2SC1973 | D307 | V06B |
| Q17,18 | 2SC2912(R,S) | U1,101 | M47F(B) |
| Q4,104 | 2SC2786(K) | U301 | μPC7805H |
| Q113,303,304 | 2SA1175(F) | U302 | μPC7915HA |
| Q301,302 | 2SA1009(L,K) | U303 | NJM7815 |
| Q305,306 | 2SC2271(E) | U304 | NJM4558D |
| | | D108 | MTZ10JC |

NIT (X74-1340-02)

W02-0409-05

CRT 150GTM31

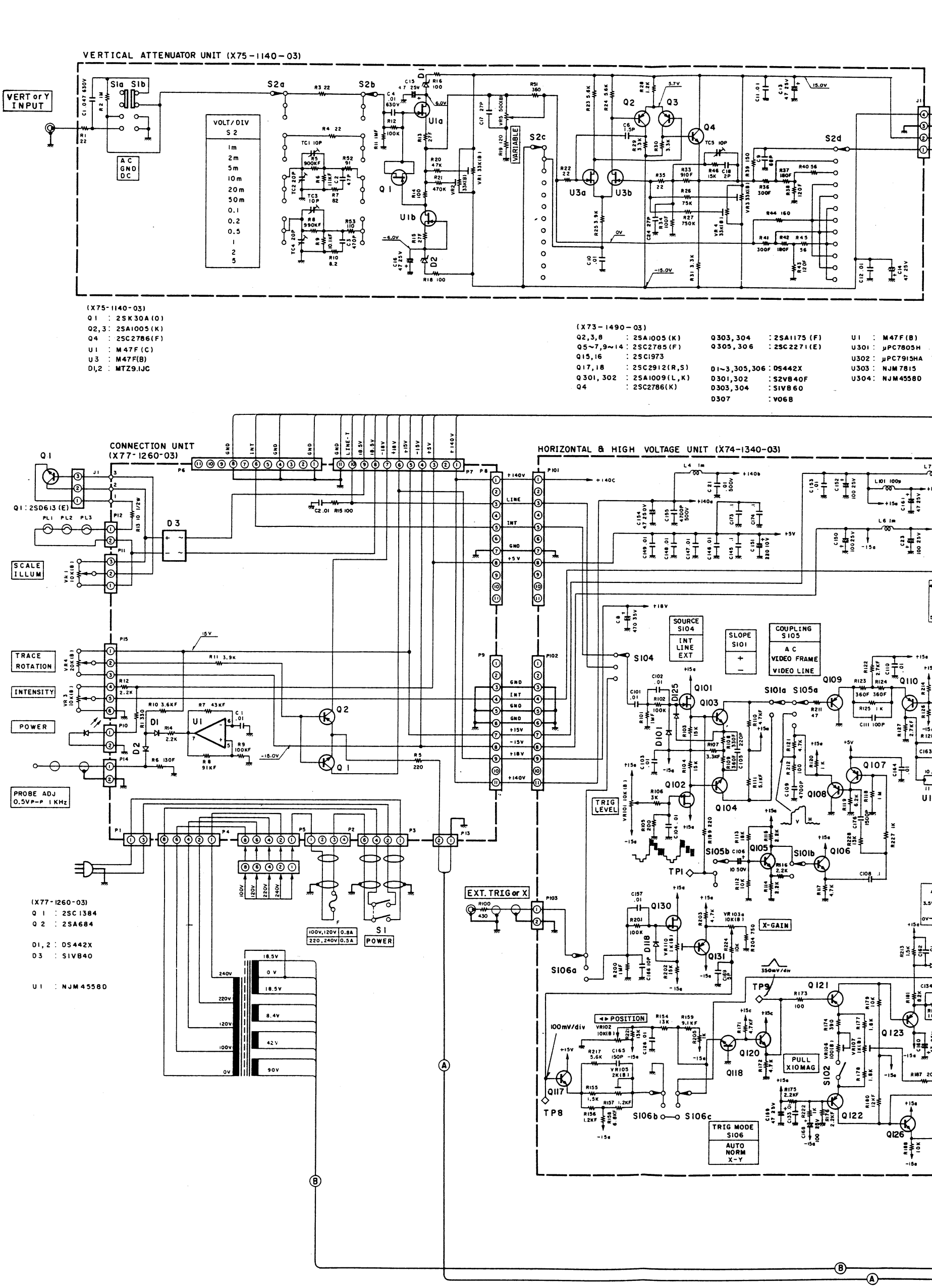
CRT SOCKET UNIT (X81-1250-01)

Z-AXIS

(X74-1340-02)

| | |
|---|---|
| U1 | NJM4558D |
| U101 | MC10103L |
| U102 | SN74LS112N |
| U103 | SN74LS02N |
| U104 | SN74LS00N |
| U105 | SN74LS08N |
| Q1, 124, 127 | 2SC2912(S) |
| Q2, 125 | 2SA1210(S) |
| Q3 | 2SD613 (E) |
| Q4, 103~106, 113, 114, 116~120, 126, 128, 129 | 2SC2785 (F) |
| Q5 | 2SC2271 (D) |
| Q101, 102, 115 | 2SK117(Y) |
| Q107 112, 121 123 | 2SA1175(F) |
| | |
| NL1, 2 | NE-28 |
| D1, 2, 8, 9, 101, 103~113, 115, 121, 124, 125 | DS442X |
| D4, 5 | W06C |
| D6, 7, 116, 123 | 1SS83 |
| D117 | MTZ5.1JB |

# CS-1010 SCHEMATIC DIAGRAM



VERTICAL AMP & POWER UNIT (X73-1490-03)

VERT OUTPUT
63Vdc
5V/div

0Vdc
8 mV/div

10Vdc
100mV/div

0Vdc
100mV/div

W02-0409-05

CRT 150GT M31

CRT SOCKET
UNIT
(X81-1250-01)

FOCUS

Z-AXIS

SWEEP TIME/DIV

VARIABLE

ASTIG

(X74-1340-03)

| | |
|---|---|
| U1 | : NJM4558D |
| U101 | : MC10103L |
| U102 | : SN74LS112N |
| U103 | : SN74LS02N |
| Q1,124,127 | : 2SC2912(S) |
| Q2,125 | : 2SA1210(S) |
| Q3 | : 2SD613(E) |
| Q4,103~106,113,114,116~120,126,128,129 | : 2SC2785(F) |
| Q5 | : 2SC2271(D) |
| Q101,102,115,130 | : 2SK117(Y) |
| Q107~112,121~123,131 | : 2SA1175(F) |
| D1,2,8,9,101,103~111,118,120,121,124,125 | : DS442X |
| D4,5 | : W06C |
| D6,7,116,123 | : 1SS83 |
| D117 | : MTZ9.1JB |
| NL1,2 | : NE-28 |

# SCHEMATIC DIAGRAM
# PARTS LIST
# P.C. BOARD

KENWOOD

# CS-1022
# CS-1021
# CS-1012
# CS-1010

# COMPOSIT

**Serial No. 7020001~**

## PARTS LIST

### VERTICAL ATTENUATOR UNIT

### X75-1160-00 (CS-1022, 1021)

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| | A22-0828-13 | SUB PANEL | | | |
| | E04-0259-05 | BNC RECEPTACLE | | | |
| | E33-4038-00 | WIRE ASSY | | | |
| | F10-1564-04 | SHIELD PLATE | | | |
| | F10-1566-04 | SHIELD PLATE | | | |
| | J25-2997-23 | PCB (UNMOUNTED) | | | |
| | K21-0852-13 | KNOB | | | |
| | K21-0855-14 | KNOB | | | |
| | N30-3006-46 | SCREW, PAN HD M 3X6 | | | |
| | N89-3006-41 | SCREW, BINDING TAP TITE | | | |
| | 001-0801-05 | COATING WIRE | | | |
| | 212-2014-05 | TUBE (PLASTIC) | | | |
| C001 | C91-0501-05 | CAP. METAL FILM | 0.047 | 10% | 630V |
| C002 | CM93BD2A470J | CAP. MICA | 47P | 5% | 100V |
| C003 | CM93BD2A471J | CAP. MICA | 470P | 5% | 100V |
| C004 | C91-0502-05 | CAP. METAL FILM | 0.01 | 20% | 630V |
| C005 | CE04W1H100M | CAP. ELECTRO | 10 | 20% | 50V |
| C006 | CC45CH1H1R5C | CAP. CERAMIC | 1.5P | 0.25P | 50V |
| C009 | CC45CH1H470J | CAP. CERAMIC | 47P | 5% | 50V |
| C010 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C011 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C012 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C013 | CE04FW1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C014 | CE04FW1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C015 | CE04FW1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C016 | CE04FW1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C017 | CC45CH1H030C | CAP. CERAMIC | 3P | 0.25P | 50V |
| C018 | CC45CH1H020C | CAP. CERAMIC | 2P | 0.25P | 50V |
| C019 | CE04BW1H010M | CAP. ELECTRO | 1 | 20% | 50V |
| C020 | CK45B1H222K | CAP. CERAMIC | 2200P | 10% | 50V |
| C023 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |
| C024 | NO USE | | | | |
| C025 | CC45CH1H1R5C | CAP. CERAMIC | 1.5P | 0.25P | 50V |
| C026 | CC45CH2H090D | CAP. CERAMIC | 9P | 0.5P | 500V |
| C027 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |
| D001 | MTZ9.1JC | DIODE ZENER | 9V | | |
| D002 | MTZ9.1JC | DIODE ZENER | 9V | | |
| J001 | E31-2367-15 | LEAD WIRE WITH CONNECTOR | | | |
| Q001 | 2SK30A(O) | FET,N-CHANNEL | | | |
| Q002 | 2SA1005(K) | TR. SI, PNP | | | |
| Q003 | 2SA1005(K) | TR. SI, PNP | | | |
| Q004 | 2SC3354(T,S) | TR. SI, NPN | | | |
| Q005 | 2SC2786(K) | TR. SI, NPN | | | |
| R001 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R002 | RD14BB2E105J | RES. CARBON | 1M | 5% | 1/4W |
| R003 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R004 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| R005 | RN14BK2E9003F | RES. METAL FILM | 900K | 1% | 1/4W |
| R006 | RN14BK2E1113F | RES. METAL FILM | 111K | 1% | 1/4W |
| R007 | RD14BB2E820J | RES. CARBON | 82 | 5% | 1/4W |
| R008 | RN14BK2E9903F | RES. METAL FILM | 990K | 1% | 1/4W |
| R009 | RN14BK2E1012F | RES. METAL FILM | 10.1K | 1% | 1/4W |
| R010 | RD14BB2E100J | RES. CARBON | 10 | 5% | 1/4W |
| R011 | RN14BK2E1004F | RES. METAL FILM | 1M | 1% | 1/4W |
| R012 | RD14BB2E104J | RES. CARBON | 100K | 5% | 1/4W |
| R013 | RN14BK2E1101F | RES. METAL FILM | 1.1K | 1% | 1/4W |
| R014 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R015 | RN14BK2E1101F | RES. METAL FILM | 1.1K | 1% | 1/4W |
| R016 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R017 | RD14BB2C302J | RES. CARBON | 3K | 5% | 1/6W |
| R018 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R019 | RD14BB2E271J | RES. CARBON | 270 | 5% | 1/4W |
| R020 | RD14BB2C564J | RES. CARBON | 560K | 5% | 1/6W |
| R021 | RD14BB2E125J | RES. CARBON | 1.2M | 5% | 1/4W |
| R022 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R023 | RN14BK2E5601F | RES. METAL FILM | 5.6K | 1% | 1/4W |
| R024 | RN14BK2E5601F | RES. METAL FILM | 5.6K | 1% | 1/4W |
| R025 | RD14BB2E392J | RES. CARBON | 3.9K | 5% | 1/4W |
| R026 | RD14BB2E753J | RES. CARBON | 75K | 5% | 1/4W |
| R027 | RD14BB2E754J | RES. CARBON | 750K | 5% | 1/4W |
| R028 | RD14BB2E112J | RES. CARBON | 1.1K | 5% | 1/4W |
| R029 | RD14BB2C332J | RES. CARBON | 3.3K | 5% | 1/6W |
| R030 | RD14BB2E332J | RES. CARBON | 3.3K | 5% | 1/4W |
| R031 | RD14BB2E332J | RES. CARBON | 3.3K | 5% | 1/4W |
| R032 | RD14BB2C182J | RES. CARBON | 1.8K | 5% | 1/6W |
| R033 | RN14BK2E9100F | RES. METAL FILM | 910 | 1% | 1/4W |
| R034 | RN14BK2E1000F | RES. METAL FILM | 100 | 1% | 1/4W |
| R035 | RD14BB2C220J | RES. CARBON | 22 | 5% | 1/6W |
| R036 | RN14BK2E3000F | RES. METAL FILM | 300 | 1% | 1/4W |
| R037 | RN14BK2E1800F | RES. METAL FILM | 180 | 1% | 1/4W |
| R038 | RN14BK2E1200F | RES. METAL FILM | 120 | 1% | 1/4W |
| R039 | RD14BB2E151J | RES. CARBON | 150 | 5% | 1/4W |
| R040 | RD14BB2E560J | RES. CARBON | 56 | 5% | 1/4W |
| R041 | RN14BK2E3000F | RES. METAL FILM | 300 | 1% | 1/4W |
| R042 | RN14BK2E1800F | RES. METAL FILM | 180 | 1% | 1/4W |
| R043 | RN14BK2E1200F | RES. METAL FILM | 120 | 1% | 1/4W |
| R044 | RD14BB2E151J | RES. CARBON | 150 | 5% | 1/4W |
| R045 | RD14BB2E560J | RES. CARBON | 56 | 5% | 1/4W |
| R046 | RD14BB2E303J | RES. CARBON | 30K | 5% | 1/4W |
| R047 | RD14BB2E473J | RES. CARBON | 47K | 5% | 1/4W |
| R048 | RD14BB2E472J | RES. CARBON | 4.7K | 5% | 1/4W |
| R049 | RD14BB2C223J | RES. CARBON | 22K | 5% | 1/6W |
| R050 | E31-2170-05 | JUMPING WIRE | | | |
| R051 | NO USE | | | | |
| R052 | RD14BB2C910J | RES. CARBON | 91 | 5% | 1/6W |
| R053 | RD14BB2C111J | RES. CARBON | 110 | 5% | 1/6W |
| R054 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R055 | RD14BB2C302J | RES. CARBON | 3K | 5% | 1/6W |
| R056 | RD14BB2C333J | RES. CARBON | 33K | 5% | 1/6W |
| S001 | S32-4007-05 | LEVER SWITCH | | | |
| S002 | S02-3501-25 | ROTARY SWITCH | | | |

# PARTS LIST

| REF.NO | PARTS NO | NAME & DESCRIPTION |
|---|---|---|
| TC001 | C05-0427-05 | CAP. TRIMMER 10P |
| TC002 | C05-0428-05 | CAP. TRIMMER 20P |
| TC003 | C05-0427-05 | CAP. TRIMMER 10P |
| TC004 | C05-0428-05 | CAP. TRIMMER 20P |
| TC005 | C05-0427-05 | CAP. TRIMMER 10P |
| U001 | UPA71A(L) | FET, N-CHANNEL |
| U002 | 2SA1349(GR,BL) | TR. SI, PNP |
| U003 | 2SK389(GR) | FET, N-CHANNEL |
| VR001 | R12-3537-05 | RES. SEMI FIXED 20K B |
| VR002 | R12-3537-05 | RES. SEMI FIXED 20K B |
| VR003 | R12-3537-05 | RES. SEMI FIXED 20K B |
| VR004 | R12-3537-05 | RES. SEMI FIXED 20K B |
| VR005 | S02-3501-25 | ROTARY SWITCH |

## VERTICAL ATTENUATOR UNIT

## X75-1160-02, 03 (CS-1012, 1010)

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| | A22-0828-13 | SUB PANEL | | | |
| | E04-0259-05 | BNC RECEPTACLE | | | |
| | E33-4038-00 | WIRE ASSY | | | |
| | F10-1564-04 | SHIELD PLATE | | | |
| | F10-1566-04 | SHIELD PLATE | | | |
| | J25-2997-23 | PCB (UNMOUNTED) | | | |
| | K21-0852-13 | KNOB | | | |
| | K21-0855-14 | KNOB | | | |
| | N30-3006-46 | SCREW, PAN HD M 3X6 | | | |
| | N89-3006-41 | SCREW, BINDING TAP TITE | | | |
| | 001-0801-05 | COATING WIRE | | | |
| | 212-2014-05 | TUBE (PLASTIC) | | | |
| C001 | C91-0501-05 | CAP. METAL FILM | 0.047 | 10% | 630V |
| C002 | CM93B02A470J | CAP. MICA | 47P | 5% | 100V |
| C003 | CM93B02A471J | CAP. MICA | 470P | 5% | 100V |
| C004 | C91-0502-05 | CAP. METAL FILM | 0.01 | 20% | 630V |
| C005 | CE04W1H100M | CAP. ELECTRO | 10 | 20% | 50V |
| C006 | CC45CH1H1R5C | CAP. CERAMIC | 1.5P | 0.25P | 50V |
| C009 | CC45CH1H470J | CAP. CERAMIC | 47P | 5% | 50V |
| C010 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C011 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C012 | CK45F1H103Z | CAP. CERAMIC | 0.01 | | 50V |
| C013 | CE04FW1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C014 | CE04FW1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C015 | CE04FW1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C016 | CE04FW1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C017 | CC45CH1H030C | CAP. CERAMIC | 3P | 0.25P | 50V |
| C018 | CC45CH1H020C | CAP. CERAMIC | 2P | 0.25P | 50V |
| C019 | CE04BW1H010M | CAP. ELECTRO | 1 | 20% | 50V |
| C020 | CK45B1H222K | CAP. CERAMIC | 2200P | 10% | 50V |
| C023 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |
| C024 | NO USE | | | | |
| C025 | CC45CH1H1R5C | CAP. CERAMIC | 1.5P | 0.25P | 50V |
| C026 | CC45CH2H090D | CAP. CERAMIC | 9P | 0.5P | 500V |
| C027 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |
| D001 | MTZ9.1JC | DIODE ZENER | 9V | | |
| D002 | MTZ9.1JC | DIODE ZENER | 9V | | |
| J001 | E31-2367-15 | LEAD WIRE WITH CONNECTOR | | | |
| Q001 | 2SK30A(O) | FET,N-CHANNEL | | | |
| Q002 | 2SA1005(K) | TR. SI, PNP | | | |
| Q003 | 2SA1005(K) | TR. SI, PNP | | | |
| Q004 | 2SC2786(K) | TR. SI, NPN | | | |
| Q005 | 2SC2786(K) | TR. SI, NPN | | | |
| R001 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R002 | RD14BB2E105J | RES. CARBON | 1M | 5% | 1/4W |
| R003 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R004 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R005 | RN14BK2E9003F | RES. METAL FILM | 900K | 1% | 1/4W |
| R006 | RN14BK2E1113F | RES. METAL FILM | 111K | 1% | 1/4W |
| R007 | RD14BB2E820J | RES. CARBON | 82 | 5% | 1/4W |
| R008 | RN14BK2E9903F | RES. METAL FILM | 990K | 1% | 1/4W |
| R009 | RN14BK2E1012F | RES. METAL FILM | 10.1K | 1% | 1/4W |
| R010 | RD14BB2E100J | RES. CARBON | 10 | 5% | 1/4W |
| R011 | RN14BK2E1004F | RES. METAL FILM | 1M | 1% | 1/4W |
| R012 | RD14BB2E104J | RES. CARBON | 100K | 5% | 1/4W |
| R013 | RN14BK2E1101F | RES. METAL FILM | 1.1K | 1% | 1/4W |
| R014 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R015 | RN14BK2E1101F | RES. METAL FILM | 1.1K | 1% | 1/4W |
| R016 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R017 | RD14BB2C302J | RES. CARBON | 3K | 5% | 1/6W |
| R018 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R019 | RD14BB2E271J | RES. CARBON | 270 | 5% | 1/4W |
| R020 | RD14BB2C564J | RES. CARBON | 560K | 5% | 1/6W |
| R021 | RD14BB2E125J | RES. CARBON | 1.2M | 5% | 1/4W |
| R022 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R023 | RN14BK2E5601F | RES. METAL FILM | 5.6K | 1% | 1/4W |
| R024 | RN14BK2E5601F | RES. METAL FILM | 5.6K | 1% | 1/4W |
| R025 | RD14BB2E392J | RES. CARBON | 3.9K | 5% | 1/4W |
| R026 | RD14BB2E753J | RES. CARBON | 75K | 5% | 1/4W |
| R027 | RD14BB2E754J | RES. CARBON | 750K | 5% | 1/4W |
| R028 | RD14BB2E112J | RES. CARBON | 1.1K | 5% | 1/4W |
| R029 | RD14BB2C332J | RES. CARBON | 3.3K | 5% | 1/6W |
| R030 | RD14BB2E332J | RES. CARBON | 3.3K | 5% | 1/4W |
| R031 | RD14BB2E332J | RES. CARBON | 3.3K | 5% | 1/4W |
| R032 | RD14BB2C182J | RES. CARBON | 1.8K | 5% | 1/6W |
| R033 | RN14BK2E9100F | RES. METAL FILM | 910 | 1% | 1/4W |
| R034 | RN14BK2E1000F | RES. METAL FILM | 100 | 1% | 1/4W |
| R035 | RD14BB2C220J | RES. CARBON | 22 | 5% | 1/6W |
| R036 | RN14BK2E3000F | RES. METAL FILM | 300 | 1% | 1/4W |
| R037 | RN14BK2E1800F | RES. METAL FILM | 180 | 1% | 1/4W |
| R038 | RN14BK2E1200F | RES. METAL FILM | 120 | 1% | 1/4W |
| R039 | RD14BB2E151J | RES. CARBON | 150 | 5% | 1/4W |
| R040 | RD14BB2E560J | RES. CARBON | 56 | 5% | 1/4W |
| R041 | RN14BK2E3000F | RES. METAL FILM | 300 | 1% | 1/4W |
| R042 | RN14BK2E1800F | RES. METAL FILM | 180 | 1% | 1/4W |
| R043 | RN14BK2E1200F | RES. METAL FILM | 120 | 1% | 1/4W |
| R044 | RD14BB2E151J | RES. CARBON | 150 | 5% | 1/4W |
| R045 | RD14BB2E560J | RES. CARBON | 56 | 5% | 1/4W |
| R046 | RD14BB2E303J | RES. CARBON | 30K | 5% | 1/4W |
| R047 | RD14BB2E473J | RES. CARBON | 47K | 5% | 1/4W |
| R048 | RD14BB2E472J | RES. CARBON | 4.7K | 5% | 1/4W |
| R049 | RD14BB2C223J | RES. CARBON | 22K | 5% | 1/6W |
| R050 | E31-2170-05 | JUMPING WIRE | | | |
| R051 | NO USE | | | | |
| R052 | RD14BB2C910J | RES. CARBON | 91 | 5% | 1/6W |
| R053 | RD14BB2C111J | RES. CARBON | 110 | 5% | 1/6W |
| R054 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R055 | RD14BB2C302J | RES. CARBON | 3K | 5% | 1/6W |
| R056 | RD14BB2C333J | RES. CARBON | 33K | 5% | 1/6W |
| S001 | S32-4007-05 | LEVER SWITCH | | | |
| S002 | S02-3501-25 | ROTARY SWITCH | | | |
| TC001 | C05-0427-05 | CAP. TRIMMER 10P | | | |
| TC002 | C05-0428-05 | CAP. TRIMMER 20P | | | |
| TC003 | C05-0427-05 | CAP. TRIMMER 10P | | | |
| TC004 | C05-0428-05 | CAP. TRIMMER 20P | | | |
| TC005 | C05-0427-05 | CAP. TRIMMER 10P | | | |
| U001 | UPA71A(L) | FET, N-CHANNEL | | | |
| U002 | 2SA1349(GR,BL) | TR. SI, PNP | | | |
| U003 | 2SK389(GR) | FET, N-CHANNEL | | | |
| VR001 | R12-3537-05 | RES. SEMI FIXED 20K B | | | |
| VR002 | R12-3537-05 | RES. SEMI FIXED 20K B | | | |
| VR003 | R12-3537-05 | RES. SEMI FIXED 20K B | | | |
| VR004 | R12-3537-05 | RES. SEMI FIXED 20K B | | | |
| VR005 | S02-3501-25 | ROTARY SWITCH | | | |

# PARTS LIST

## VERTICAL AMP & POWER UNIT

### X73-1720-00 (CS-1022)

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| | E23-0526-04 | EARTH PLATE | | | |
| | E31-2303-05 | LEAD WIRE WITH CONNECTOR | | | |
| | E31-2706-05 | LEAD WIRE WITH CONNECTOR | | | |
| | E33-4031-00 | WIRE ASSY | | | |
| | F01-0835-05 | HEAT SINK | | | |
| | F01-0836-04 | HEAT SINK | | | |
| | J25-2999-23 | PCB (UNMOUNTED) | | | |
| | J61-0517-05 | STADOFF CLIP | | | |
| | N19-0191-05 | WASHER NONMETAL | | | |
| | N19-0702-04 | WASHER | | | |
| | N30-3008-46 | SCREW, PAN HD | M 3X8 | | |
| | R92-0150-05 | JUMPING RES. | ZERO OHM | | |
| C006 | CC45CH1H221J | CAP. CERAMIC | 220P | 5% | 50V |
| C007 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |
| C008 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C009 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C010 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C011 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C012 | NO USE | | | | |
| C013 | CC45CH1H470J | CAP. CERAMIC | 47P | 5% | 50V |
| C014 | CE04W1E220M | CAP. ELECTRO | 22 | 20% | 25V |
| C015 | NO USE | | | | |
| C016 | CE04W1E220M | CAP. ELECTRO | 22 | 20% | 25V |
| C017 | CE04BW1E220M | CAP. ELECTRO | 22 | 20% | 25V |
| C021 | CC45CH1H020C | CAP. CERAMIC | 2P | 0.25P | 50V |
| C022 | CC45CH1H1R5C | CAP. CERAMIC | 1.5P | 0.25P | 50V |
| C023 | CK45B1H102K | CAP. CERAMIC | 1000P | 10% | 50V |
| C104 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C105 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C106 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C109 | CC45CH1H470J | CAP. CERAMIC | 47P | 5% | 50V |
| C110 | CC45CH1H470J | CAP. CERAMIC | 47P | 5% | 50V |
| C111 | CE04BW1H010M | CAP. ELECTRO | 1 | 20% | 50V |
| C112 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |
| C116 | CC45CH1H1R5C | CAP. CERAMIC | 1.5P | 0.25P | 50V |
| C117 | CC45CH1H1R5C | CAP. CERAMIC | 1.5P | 0.25P | 50V |
| C118 | CK45B1H102K | CAP. CERAMIC | 1000P | 10% | 50V |
| C119 | NO USE | | | | |
| C120 | CC45CH1H121J | CAP. CERAMIC | 120P | 5% | 50V |
| C301 | CE04W1V222M | CAP. ELECTRO | 2200 | 20% | 35V |
| C302 | CE04W1V222M | CAP. ELECTRO | 2200 | 20% | 35V |
| C303 | CE04W1E222M | CAP. ELECTRO | 2200 | 20% | 25V |
| C304 | C90-0910-05 | CAP. ELECTRO | 100 | 20% | 200V |
| C305 | CE04W2E470 | CAP. ELECTRO | 47 | | 250V |
| C306 | CE04W1A101M | CAP. ELECTRO | 100 | 20% | 10V |
| C307 | CE04W1E101M | CAP. ELECTRO | 100 | 20% | 25V |
| C308 | CE04W1E101M | CAP. ELECTRO | 100 | 20% | 25V |
| C309 | CE04W2C100 | CAP. ELECTRO | 10 | | 160V |
| C310 | CE04W2E010 | CAP. ELECTRO | 1 | | 250V |
| C311 | CE04BW1H010M | CAP. ELECTRO | 1 | 20% | 50V |
| C312 | CE04W1H010M | CAP. ELECTRO | 1 | 20% | 50V |
| C313 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |
| C314 | CE04W1H010M | CAP. ELECTRO | 1 | 20% | 50V |
| C315 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |
| C316 | CE04W1H010M | CAP. ELECTRO | 1 | 20% | 50V |
| C317 | CQ92FM1H104K | CAP. MYLAR | 0.1 | 10% | 50V |
| C318 | CK45B1H102K | CAP. CERAMIC | 1000P | 10% | 50V |
| C319 | CK45B1H102K | CAP. CERAMIC | 1000P | 10% | 50V |
| C320 | CK45B2H103K | CAP. CERAMIC | 0.01 | 10% | 500V |
| C321 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |
| C324 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |
| D001 | DS442X | DIODE | | | |
| D002 | DS442X | DIODE | | | |
| D003 | DS442X | DIODE | | | |
| D101 | DS442X | DIODE | | | |
| D102 | DS442X | DIODE | | | |
| D103 | DS442X | DIODE | | | |
| D104 | DS442X | DIODE | | | |
| D105 | DS442X | DIODE | | | |
| D106 | DS442X | DIODE | | | |
| D107 | DS442X | DIODE | | | |
| D108 | MTZ10JC | DIODE, ZENER | 10V | | |

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| D301 | S2VB40F1 | DIODE | | | |
| D302 | S2VB40F1 | DIODE | | | |
| D303 | S1VB60 | DIODE | | | |
| D304 | S1VB60 | DIODE | | | |
| D305 | DS442X | DIODE | | | |
| D306 | DS442X | DIODE | | | |
| D307 | V06B | DIODE | | | |
| L001 | L40-1025-03 | FERRI INDUCTOR | | | |
| L002 | L40-1025-03 | FERRI INDUCTOR | | | |
| P001 | E40-0473-05 | PIN CONNECTOR | 4 P | | |
| P002 | E40-0273-05 | PIN CONNECTOR | 2 P | | |
| P003 | E04-0154-05 | BNC RECEPTACLE | | | |
| P004 | E23-0046-04 | TERMINAL | | | |
| P005 | E23-0046-04 | TERMINAL | | | |
| P101 | E40-0473-05 | PIN CONNECTOR | 4 P | | |
| P301 | E40-0930-05 | PIN CONNECTOR | 9 P | | |
| P302 | E40-1116-05 | PIN CONNECTOR | 11 P | | |
| P303 | E40-1116-05 | PIN CONNECTOR | 11 P | | |
| Q002 | 2SA1005(K) | TR. SI, PNP | | | |
| Q003 | 2SA1005(K) | TR. SI, PNP | | | |
| Q004 | 2SC3354(T,S) | TR. SI, NPN | | | |
| Q005 | 2SC2786(K) | TR. SI, NPN | | | |
| Q006 | 2SC2786(K) | TR. SI, NPN | | | |
| Q007 | 2SC2786(K) | TR. SI, NPN | | | |
| Q008 | 2SA1005(K) | TR. SI, PNP | | | |
| Q009 | 2SC2786(K) | TR. SI, NPN | | | |
| Q010 | 2SC2786(K) | TR. SI, NPN | | | |
| Q011 | 2SC2786(K) | TR. SI, NPN | | | |
| Q012 | 2SC2786(K) | TR. SI, NPN | | | |
| Q013 | 2SC2786(K) | TR. SI, NPN | | | |
| Q014 | 2SC2786(K) | TR. SI, NPN | | | |
| Q015 | 2SC2407 | TR. SI, NPN | | | |
| Q016 | 2SC2407 | TR. SI, NPN | | | |
| Q017 | 2SC2912(R,S) | TR. SI, NPN | | | |
| Q018 | 2SC2912(R,S) | TR. SI, NPN | | | |
| Q102 | 2SA1005(K) | TR. SI, PNP | | | |
| Q103 | 2SA1005(K) | TR. SI, PNP | | | |
| Q104 | 2SC3354(T,S) | TR. SI, NPN | | | |
| Q105 | 2SC2786(K) | TR. SI, NPN | | | |
| Q106 | 2SC2785(F) | TR. SI, NPN | | | |
| Q107 | 2SC2786(K) | TR. SI, NPN | | | |
| Q108 | 2SC2786(K) | TR. SI, NPN | | | |
| Q109 | 2SC2786(K) | TR. SI, NPN | | | |
| Q110 | 2SC2786(K) | TR. SI, NPN | | | |
| Q111 | 2SC2786(K) | TR. SI, NPN | | | |
| Q112 | 2SC2786(K) | TR. SI, NPN | | | |
| Q113 | 2SA1175(F) | TR. SI, PNP | | | |
| Q114 | 2SC2785(F) | TR. SI, NPN | | | |
| Q115 | 2SC2786(K) | TR. SI, NPN | | | |
| Q301 | 2SA1009A(J,K) | TR. SI, PNP | | | |
| Q302 | 2SA1009A(J,K) | TR. SI, PNP | | | |
| Q303 | 2SA1175(F) | TR. SI, PNP | | | |
| Q304 | 2SA1175(F) | TR. SI, PNP | | | |
| Q305 | 2SC2271(E) | TR. SI, NPN | | | |
| Q306 | 2SC2271(E) | TR. SI, NPN | | | |
| R001 | RD14BB2E105J | RES. CARBON | 1M | % | 1/4W |
| R002 | RD14BB2E220J | RES. CARBON | 22 | % | 1/4W |
| R003 | RN14BK2E5601F | RES. METAL FILM | 5.6K | % | 1/4W |
| R004 | RN14BK2E5601F | RES. METAL FILM | 5.6K | % | 1/4W |
| R005 | RD14BB2C120J | RES. CARBON | 12 | % | 1/6W |
| R006 | RD14BB2C510J | RES. CARBON | 51 | % | 1/6W |
| R007 | RD14BB2C510J | RES. CARBON | 51 | % | 1/6W |
| R008 | RD14BB2E392J | RES. CARBON | 3.9K | % | 1/4W |
| R009 | RD14BB2E102J | RES. CARBON | 1K | % | 1/4W |
| R010 | RD14BB2E302J | RES. CARBON | 3K | % | 1/4W |
| R011 | RD14BB2C220J | RES. CARBON | 22 | % | 1/6W |
| R012 | RD14BB2C243J | RES. CARBON | 24K | % | 1/6W |
| R013 | RD14BB2E302J | RES. CARBON | 3K | % | 1/4W |
| R014 | RN14BK2C1000F | RES. METAL FILM | 100 | % | 1/6W |
| R015 | RN14BK2C1301F | RES. METAL FILM | 1.3K | % | 1/6W |
| R016 | RD14BB2E220J | RES. CARBON | 22 | % | 1/4W |
| R017 | RD14BB2C302J | RES. CARBON | 3K | % | 1/6W |
| R018 | RD14BB2C753J | RES. CARBON | 75K | % | 1/6W |
| R019 | RD14BB2E220J | RES. CARBON | 22 | % | 1/4W |
| R020 | RD14BB2E331J | RES. CARBON | 330 | % | 1/4W |
| R021 | RD14BB2E331J | RES. CARBON | 330 | % | 1/4W |
| R022 | NO USE | | | | |
| R023 | RD14BB2E220J | RES. CARBON | 22 | % | 1/4W |

# PARTS LIST

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| R024 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R025 | RD14BB2E510J | RES. CARBON | 51 | 5% | 1/4W |
| R026 | RD14BB2E472J | RES. CARBON | 4.7K | 5% | 1/4W |
| R027 | RD14BB2E472J | RES. CARBON | 4.7K | 5% | 1/4W |
| R028 | RD14BB2E270J | RES. CARBON | 27 | 5% | 1/4W |
| R029 | RD14BB2E270J | RES. CARBON | 27 | 5% | 1/4W |
| R030 | RD14BB2E300J | RES. CARBON | 30 | 5% | 1/4W |
| R031 | RD14BB2E151J | RES. CARBON | 150 | 5% | 1/4W |
| R032 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R033 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R034 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R035 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R036 | RN14BK2E2201F | RES. METAL FILM | 2.2K | 1% | 1/4W |
| R037 | RN14BK2E2201F | RES. METAL FILM | 2.2K | 1% | 1/4W |
| R038 | RD14BB2E750J | RES. CARBON | 75 | 5% | 1/4W |
| R039 | RD14BB2E431J | RES. CARBON | 430 | 5% | 1/4W |
| R040 | RD14BB2E682J | RES. CARBON | 6.8K | 5% | 1/4W |
| R041 | RD14BB2E332J | RES. CARBON | 3.3K | 5% | 1/4W |
| R042 | RD14BB2E471J | RES. CARBON | 470 | 5% | 1/4W |
| R043 | RD14BB2E471J | RES. CARBON | 470 | 5% | 1/4W |
| R044 | RN14BK2E8200F | RES. METAL FILM | 820 | 1% | 1/4W |
| R045 | RN14BK2E8200F | RES. METAL FILM | 820 | 1% | 1/4W |
| R046 | RN14BK2E8200F | RES. METAL FILM | 820 | 1% | 1/4W |
| R047 | RN14BK2E8200F | RES. METAL FILM | 820 | 1% | 1/4W |
| R048 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R049 | RD14BB2E302J | RES. CARBON | 3K | 5% | 1/4W |
| R050 | RD14BB2E302J | RES. CARBON | 3K | 5% | 1/4W |
| R051 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R052 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R053 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R054 | RD14BB2E201J | RES. CARBON | 200 | 5% | 1/4W |
| R055 | RD14BB2E201J | RES. CARBON | 200 | 5% | 1/4W |
| R056 | RD14BB2E121J | RES. CARBON | 120 | 5% | 1/4W |
| R057 | NO USE | | | | |
| R058 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R059 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R060 | RS14GB3F681J | RES. METAL FILM | 680 | 5% | 3W |
| R061 | RS14GB3F681J | RES. METAL FILM | 680 | 5% | 3W |
| R062 | RS14GB3F681J | RES. METAL FILM | 680 | 5% | 3W |
| R063 | RS14GB3F681J | RES. METAL FILM | 680 | 5% | 3W |
| R064 | RD14BB2E104J | RES. CARBON | 100K | 5% | 1/4W |
| R065 | RD14BB2E201J | RES. CARBON | 200 | 5% | 1/4W |
| R066 | RD14BB2E561J | RES. CARBON | 560 | 5% | 1/4W |
| R067 | RD14BB2E562J | RES. CARBON | 5.6K | 5% | 1/4W |
| R070 | RD14BB2C153J | RES. CARBON | 15K | 5% | 1/6W |
| R071 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R101 | RD14BB2E105J | RES. CARBON | 1M | 5% | 1/4W |
| R102 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R103 | RN14BK2E5601F | RES. METAL FILM | 5.6K | 1% | 1/4W |
| R104 | RN14BK2E5601F | RES. METAL FILM | 5.6K | 1% | 1/4W |
| R105 | RD14BB2C120J | RES. CARBON | 12 | 5% | 1/6W |
| R106 | RD14BB2C510J | RES. CARBON | 51 | 5% | 1/6W |
| R107 | RD14BB2C510J | RES. CARBON | 51 | 5% | 1/6W |
| R108 | RD14BB2C392J | RES. CARBON | 3.9K | 5% | 1/6W |
| R109 | RD14BB2E102J | RES. CARBON | 1K | 5% | 1/4W |
| R110 | RD14BB2E302J | RES. CARBON | 3K | 5% | 1/4W |
| R111 | RD14BB2C220J | RES. CARBON | 22 | 5% | 1/6W |
| R112 | RD14BB2C243J | RES. CARBON | 24K | 5% | 1/6W |
| R113 | RD14BB2E302J | RES. CARBON | 3K | 5% | 1/4W |
| R114 | RN14BK2C1000F | RES. METAL FILM | 100 | 1% | 1/6W |
| R115 | RD14BB2C753J | RES. CARBON | 75K | 5% | 1/6W |
| R116 | RN14BK2C1301F | RES. METAL FILM | 1.3K | 1% | 1/6W |
| R117 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R118 | RD14BB2E182J | RES. CARBON | 1.8K | 5% | 1/4W |
| R119 | NO USE | | | | |
| R120 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R121 | RD14BB2E561J | RES. CARBON | 560 | 5% | 1/4W |
| R122 | NO USE | | | | |
| R123 | RD14BB2E333J | RES. CARBON | 33K | 5% | 1/4W |
| R124 | RD14BB2E151J | RES. CARBON | 150 | 5% | 1/4W |
| R125 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R126 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R127 | RD14BB2C222J | RES. CARBON | 2.2K | 5% | 1/6W |
| R128 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R129 | RN14BK2E2201F | RES. METAL FILM | 2.2K | 1% | 1/4W |
| R130 | RN14BK2E2201F | RES. METAL FILM | 2.2K | 1% | 1/4W |
| R131 | RD14BB2E750J | RES. CARBON | 75 | 5% | 1/4W |
| R132 | RN14BK2E2001F | RES. METAL FILM | 2K | 1% | 1/4W |
| R133 | RN14BK2E2001F | RES. METAL FILM | 2K | 1% | 1/4W |
| R134 | RD14BB2E510J | RES. CARBON | 51 | 5% | 1/4W |
| R135 | RD14BB2E511J | RES. CARBON | 510 | 5% | 1/4W |
| R136 | RD14BB2E123J | RES. CARBON | 12K | 5% | 1/4W |
| R137 | RD14BB2E472J | RES. CARBON | 4.7K | 5% | 1/4W |
| R138 | RD14BB2E332J | RES. CARBON | 3.3K | 5% | 1/4W |
| R139 | RD14BB2E332J | RES. CARBON | 3.3K | 5% | 1/4W |
| R140 | RD14BB2E471J | RES. CARBON | 470 | 5% | 1/4W |
| R141 | RD14BB2E471J | RES. CARBON | 470 | 5% | 1/4W |
| R142 | RD14BB2E471J | RES. CARBON | 470 | 5% | 1/4W |
| R143 | RD14BB2E471J | RES. CARBON | 470 | 5% | 1/4W |
| R144 | RD14BB2E272J | RES. CARBON | 2.7K | 5% | 1/4W |
| R145 | RD14BB2E153J | RES. CARBON | 15K | 5% | 1/4W |
| R146 | RD14BB2E153J | RES. CARBON | 15K | 5% | 1/4W |
| R147 | RD14BB2E272J | RES. CARBON | 2.7K | 5% | 1/4W |
| R148 | RD14BB2E223J | RES. CARBON | 22K | 5% | 1/4W |
| R149 | RD14BB2E682J | RES. CARBON | 6.8K | 5% | 1/4W |
| R150 | RD14BB2E102J | RES. CARBON | 1K | 5% | 1/4W |
| R151 | RD14BB2E102J | RES. CARBON | 1K | 5% | 1/4W |
| R152 | RD14BB2E151J | RES. CARBON | 150 | 5% | 1/4W |
| R153 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R154 | NO USE | | | | |
| R155 | RD14BB2E470J | RES. CARBON | 47 | 5% | 1/4W |
| R156 | NO USE | | | | |
| R157 | RD14BB2E821J | RES. CARBON | 820 | 5% | 1/4W |
| R158 | NO USE | | | | |
| R159 | RD14BB2E682J | RES. CARBON | 6.8K | 5% | 1/4W |
| R160 | RD14BB2C153J | RES. CARBON | 15K | 5% | 1/6W |
| R301 | RD14BB2E473J | RES. CARBON | 47K | 5% | 1/4W |
| R302 | RD14BB2E102J | RES. CARBON | 1K | 5% | 1/4W |
| R303 | RD14BB2E3R3J | RES. CARBON | 3.3 | 5% | 1/4W |
| R304 | RD14BB2E100J | RES. CARBON | 10 | 5% | 1/4W |
| R305 | RD14BB2E562J | RES. CARBON | 5.6K | 5% | 1/4W |
| R306 | RD14BB2E822J | RES. CARBON | 8.2K | 5% | 1/4W |
| R307 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R308 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R309 | RN14BK2E1502F | RES. METAL FILM | 15K | 1% | 1/4W |
| R310 | RN14BK2E1003F | RES. METAL FILM | 100K | 1% | 1/4W |
| R311 | RN14BK2E1602F | RES. METAL FILM | 16K | 1% | 1/4W |
| R312 | RN14BK2E1503F | RES. METAL FILM | 150K | 1% | 1/4W |
| R313 | RD14BY2H104J | RES. CARBON | 100K | 5% | 1/2W |
| R314 | RD14BY2H104J | RES. CARBON | 100K | 5% | 1/2W |
| S101 | S42-4509-05 | PUSH SWITCH | | | |
| S102 | S42-4509-05 | PUSH SWITCH | | | |
| TC001 | C05-0425-05 | CAP. TRIMMER | 70P | | |
| TC002 | C05-0425-05 | CAP. TRIMMER | 70P | | |
| TC101 | C05-0434-05 | CAP. TRIMMER | 20P | | |
| TC102 | C05-0434-05 | CAP. TRIMMER | 20P | | |
| TP001 | E23-0046-04 | TERMINAL | | | |
| TP002 | E23-0046-04 | TERMINAL | | | |
| TP003 | E23-0046-04 | TERMINAL | | | |
| TP101 | E23-0046-04 | TERMINAL | | | |
| TP102 | E23-0046-04 | TERMINAL | | | |
| TP103 | E23-0046-04 | TERMINAL | | | |
| TP104 | E23-0046-04 | TERMINAL | | | |
| U001 | 2SK389(GR) | FET, N-CHANNEL | | | |
| U101 | 2SK389(GR) | FET, N-CHANNEL | | | |
| U301 | UPC7805H | IC, VOLTAGE REGULATOR | | | |
| U302 | UPC7915HA | IC, VOLTAGE REGULATOR | | | |
| U303 | NJM7815A | IC, VOLTAGE REGULATOR | | | |
| U304 | NJM4558D | IC, OP AMP | | | |
| VR001 | R05-3509-05 | V.R. | 20K B | | |
| VR002 | R12-3541-05 | RES. SEMI FIXED | 20K B | | |
| VR003 | R12-0566-05 | RES. SEMI FIXED | 200 B | | |
| VR004 | R12-0565-05 | RES. SEMI FIXED | 100 B | | |
| VR005 | R12-0561-05 | RES. SEMI FIXED | 100 B | | |
| VR006 | R12-0565-05 | RES. SEMI FIXED | 100 B | | |
| VR101 | R05-3509-05 | V.R. | 20K B | | |
| VR102 | R12-3541-05 | RES. SEMI FIXED | 20K B | | |
| VR103 | R12-0565-05 | RES. SEMI FIXED | 100 B | | |
| VR104 | R12-0567-05 | RES. SEMI FIXED | 500 B | | |
| VR105 | R12-3541-05 | RES. SEMI FIXED | 20K B | | |

# PARTS LIST

## VERTICAL AMP & POWER UNIT

### X73-1720-02 (CS-1012)

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| | E23-0526-04 | EARTH PLATE | | | |
| | E31-2706-05 | LEAD WIRE WITH CONNECTOR | | | |
| | E33-4031-00 | WIRE ASSY | | | |
| | F01-0835-05 | HEAT SINK | | | |
| | F01-0836-04 | HEAT SINK | | | |
| | J25-2999-23 | PCB (UNMOUNTED) | | | |
| | J61-0517-05 | STADOFF CLIP | | | |
| | N19-0191-05 | WASHER NONMETAL | | | |
| | N19-0702-04 | WASHER | | | |
| | N30-3008-46 | SCREW, PAN HD | M 3X8 | | |
| | R92-0150-05 | JUMPING RES. | ZERO OHM | | |
| C006 | CC45SL1H471J | CAP. CERAMIC | 470P | 5% | 50V |
| C007 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |
| C008 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C009 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C010 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C011 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C012 | NO USE | | | | |
| C013 | CC45CH1H470J | CAP. CERAMIC | 47P | 5% | 50V |
| C014 | CE04W1E220M | CAP. ELECTRO | 22 | 20% | 25V |
| C015 | NO USE | | | | |
| C016 | CE04W1E220M | CAP. ELECTRO | 22 | 20% | 25V |
| C017 | CE04BW1E220M | CAP. ELECTRO | 22 | 20% | 25V |
| C021 | CC45CH1H020C | CAP. CERAMIC | 2P | 0.25P | 50V |
| C022 | CC45CH1H1R5C | CAP. CERAMIC | 1.5P | 0.25P | 50V |
| C023 | CK45B1H102K | CAP. CERAMIC | 1000P | 10% | 50V |
| C104 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C105 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C106 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C107 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C108 | NO USE | | | | |
| C109 | CC45CH1H470J | CAP. CERAMIC | 47P | 5% | 50V |
| C110 | CC45CH1H470J | CAP. CERAMIC | 47P | 5% | 50V |
| C111 | CE04BW1H010M | CAP. ELECTRO | 1 | 20% | 50V |
| C112 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |
| C116 | CC45CH1H1R5C | CAP. CERAMIC | 1.5P | 0.25P | 50V |
| C117 | CC45CH1H1R5C | CAP. CERAMIC | 1.5P | 0.25P | 50V |
| C118 | CK45B1H102K | CAP. CERAMIC | 1000P | 10% | 50V |
| C301 | CE04W1V222M | CAP. ELECTRO | 2200 | 20% | 35V |
| C302 | CE04W1V222M | CAP. ELECTRO | 2200 | 20% | 35V |
| C303 | CE04W1E222M | CAP. ELECTRO | 2200 | 20% | 25V |
| C304 | C90-0910-05 | CAP. ELECTRO | 100 | 20% | 200V |
| C305 | CE04W2E470 | CAP. ELECTRO | 47 | | 250V |
| C306 | CE04W1A101M | CAP. ELECTRO | 100 | 20% | 10V |
| C307 | CE04W1E101M | CAP. ELECTRO | 100 | 20% | 25V |
| C308 | CE04W1E101M | CAP. ELECTRO | 100 | 20% | 25V |
| C309 | CE04W2C100 | CAP. ELECTRO | 10 | | 160V |
| C310 | CE04W2E010 | CAP. ELECTRO | 1 | | 250V |
| C311 | CE04BW1H010M | CAP. ELECTRO | 1 | 20% | 50V |
| C312 | CE04W1H010M | CAP. ELECTRO | 1 | 20% | 50V |
| C313 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |
| C314 | CE04W1H010M | CAP. ELECTRO | 1 | 20% | 50V |
| C315 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |
| C316 | CE04W1H010M | CAP. ELECTRO | 1 | 20% | 50V |
| C317 | CQ92FM1H104K | CAP. MYLAR | 0.1 | 10% | 50V |
| C318 | CK45B1H102K | CAP. CERAMIC | 1000P | 10% | 50V |
| C319 | CK45B1H102K | CAP. CERAMIC | 1000P | 10% | 50V |
| C320 | CK45B2H103K | CAP. CERAMIC | 0.01 | 10% | 500V |
| C321 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |
| C324 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |
| D001 | DS442X | DIODE | | | |
| D002 | DS442X | DIODE | | | |
| D003 | DS442X | DIODE | | | |
| D101 | DS442X | DIODE | | | |
| D102 | DS442X | DIODE | | | |
| D103 | DS442X | DIODE | | | |
| D104 | DS442X | DIODE | | | |
| D105 | DS442X | DIODE | | | |
| D106 | DS442X | DIODE | | | |
| D107 | DS442X | DIODE | | | |
| D108 | MTZ10JC | DIODE, ZENER | 10V | | |

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| D301 | S2VB40F1 | DIODE | | | |
| D302 | S2VB40F1 | DIODE | | | |
| D303 | S1VB60 | DIODE | | | |
| D304 | S1VB60 | DIODE | | | |
| D305 | DS442X | DIODE | | | |
| D306 | DS442X | DIODE | | | |
| D307 | V06B | DIODE | | | |
| L001 | L40-1025-03 | FERRI INDUCTOR | | | |
| L002 | L40-1025-03 | FERRI INDUCTOR | | | |
| P001 | E40-0473-05 | PIN CONNECTOR | 4 P | | |
| P002 | E40-0273-05 | PIN CONNECTOR | 2 P | | |
| P003 | E04-0154-05 | BNC RECEPTACLE | | | |
| P004 | E23-0046-04 | TERMINAL | | | |
| P005 | E23-0046-04 | TERMINAL | | | |
| P101 | E40-0473-05 | PIN CONNECTOR | 4 P | | |
| P301 | E40-0930-05 | PIN CONNECTOR | 9 P | | |
| P302 | E40-1116-05 | PIN CONNECTOR | 11 P | | |
| P303 | E40-1116-05 | PIN CONNECTOR | 11 P | | |
| Q002 | 2SA1005(K) | TR. SI, PNP | | | |
| Q003 | 2SA1005(K) | TR. SI, PNP | | | |
| Q004 | 2SC2786(K) | TR. SI, NPN | | | |
| Q005 | 2SC2785(F) | TR. SI, NPN | | | |
| Q006 | 2SC2785(F) | TR. SI, NPN | | | |
| Q007 | 2SC2785(F) | TR. SI, NPN | | | |
| Q008 | 2SA1005(K) | TR. SI, PNP | | | |
| Q009 | 2SC2785(F) | TR. SI, NPN | | | |
| Q010 | 2SC2785(F) | TR. SI, NPN | | | |
| Q011 | 2SC2785(F) | TR. SI, NPN | | | |
| Q012 | 2SC2785(F) | TR. SI, NPN | | | |
| Q013 | 2SC2785(F) | TR. SI, NPN | | | |
| Q014 | 2SC2785(F) | TR. SI, NPN | | | |
| Q015 | 2SC1973 | TR. SI, NPN | | | |
| Q016 | 2SC1973 | TR. SI, NPN | | | |
| Q017 | 2SC2912(R,S) | TR. SI, NPN | | | |
| Q018 | 2SC2912(R,S) | TR. SI, NPN | | | |
| Q102 | 2SA1005(K) | TR. SI, PNP | | | |
| Q103 | 2SA1005(K) | TR. SI, PNP | | | |
| Q104 | 2SC2786(K) | TR. SI, NPN | | | |
| Q105 | 2SC2785(F) | TR. SI, NPN | | | |
| Q106 | 2SC2785(F) | TR. SI, NPN | | | |
| Q107 | 2SC2785(F) | TR. SI, NPN | | | |
| Q108 | 2SC2785(F) | TR. SI, NPN | | | |
| Q109 | 2SC2785(F) | TR. SI, NPN | | | |
| Q110 | 2SC2785(F) | TR. SI, NPN | | | |
| Q111 | 2SC2785(F) | TR. SI, NPN | | | |
| Q112 | 2SC2785(F) | TR. SI, NPN | | | |
| Q113 | 2SA1175(F) | TR. SI, PNP | | | |
| Q114 | 2SC2785(F) | TR. SI, NPN | | | |
| Q115 | 2SC2785(F) | TR. SI, NPN | | | |
| Q301 | 2SA1009A(J,K) | TR. SI, PNP | | | |
| Q302 | 2SA1009A(J,K) | TR. SI, PNP | | | |
| Q303 | 2SA1175(F) | TR. SI, PNP | | | |
| Q304 | 2SA1175(F) | TR. SI, PNP | | | |
| Q305 | 2SC2271(E) | TR. SI, NPN | | | |
| Q306 | 2SC2271(E) | TR. SI, NPN | | | |
| R001 | RD14BB2E105J | RES. CARBON | 1M | 5% | 1/4W |
| R002 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R003 | RN14BK2E5601F | RES. METAL FILM | 5.6K | 1% | 1/4W |
| R004 | RN14BK2E5601F | RES. METAL FILM | 5.6K | 1% | 1/4W |
| R005 | RD14BB2C120J | RES. CARBON | 12 | 5% | 1/6W |
| R006 | RD14BB2C510J | RES. CARBON | 51 | 5% | 1/6W |
| R007 | RD14BB2C510J | RES. CARBON | 51 | 5% | 1/6W |
| R008 | RD14BB2E392J | RES. CARBON | 3.9K | 5% | 1/4W |
| R009 | RD14BB2E102J | RES. CARBON | 1K | 5% | 1/4W |
| R010 | RD14BB2E302J | RES. CARBON | 3K | 5% | 1/4W |
| R011 | RD14BB2C220J | RES. CARBON | 22 | 5% | 1/6W |
| R012 | RD14BB2C243J | RES. CARBON | 24K | 5% | 1/6W |
| R013 | RD14BB2E302J | RES. CARBON | 3K | 5% | 1/4W |
| R014 | NO USE | | | | |
| R015 | RN14BK2C1301F | RES. METAL FILM | 1.3K | 1% | 1/6W |
| R016 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R017 | RD14BB2C302J | RES. CARBON | 3K | 5% | 1/6W |
| R018 | RD14BB2C753J | RES. CARBON | 75K | 5% | 1/6W |
| R019 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R020 | RD14BB2E331J | RES. CARBON | 330 | 5% | 1/4W |
| R021 | RD14BB2E331J | RES. CARBON | 330 | 5% | 1/4W |
| R022 | NO USE | | | | |
| R023 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |

# PARTS LIST

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| R024 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R025 | RD14BB2E510J | RES. CARBON | 51 | 5% | 1/4W |
| R026 | RD14BB2E472J | RES. CARBON | 4.7K | 5% | 1/4W |
| R027 | RD14BB2E472J | RES. CARBON | 4.7K | 5% | 1/4W |
| R028 | RD14BB2E270J | RES. CARBON | 27 | 5% | 1/4W |
| R029 | RD14BB2E270J | RES. CARBON | 27 | 5% | 1/4W |
| R030 | RD14BB2E300J | RES. CARBON | 30 | 5% | 1/4W |
| R031 | RD14BB2E470J | RES. CARBON | 47 | 5% | 1/4W |
| R032 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R033 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R034 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R035 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R036 | RN14BK2E2201F | RES. METAL FILM | 2.2K | 1% | 1/4W |
| R037 | RN14BK2E2201F | RES. METAL FILM | 2.2K | 1% | 1/4W |
| R038 | RD14BB2E750J | RES. CARBON | 75 | 5% | 1/4W |
| R039 | RD14BB2E431J | RES. CARBON | 430 | 5% | 1/4W |
| R040 | RD14BB2E682J | RES. CARBON | 6.8K | 5% | 1/4W |
| R041 | RD14BB2E332J | RES. CARBON | 3.3K | 5% | 1/4W |
| R042 | RD14BB2E471J | RES. CARBON | 470 | 5% | 1/4W |
| R043 | RD14BB2E471J | RES. CARBON | 470 | 5% | 1/4W |
| R044 | RN14BK2E8200F | RES. METAL FILM | 820 | 1% | 1/4W |
| R045 | RN14BK2E8200F | RES. METAL FILM | 820 | 1% | 1/4W |
| R046 | RN14BK2E8200F | RES. METAL FILM | 820 | 1% | 1/4W |
| R047 | RN14BK2E8200F | RES. METAL FILM | 820 | 1% | 1/4W |
| R048 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R049 | RD14BB2E302J | RES. CARBON | 3K | 5% | 1/4W |
| R050 | RD14BB2E302J | RES. CARBON | 3K | 5% | 1/4W |
| R051 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R052 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R053 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R054 | RD14BB2E221J | RES. CARBON | 220 | 5% | 1/4W |
| R055 | RD14BB2E221J | RES. CARBON | 220 | 5% | 1/4W |
| R056 | RD14BB2E750J | RES. CARBON | 75 | 5% | 1/4W |
| R057 | RD14BB2E121J | RES. CARBON | 120 | 5% | 1/4W |
| R058 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R059 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R060 | RS14GB3F681J | RES. METAL FILM | 680 | 5% | 3W |
| R061 | RS14GB3F681J | RES. METAL FILM | 680 | 5% | 3W |
| R062 | RS14GB3F681J | RES. METAL FILM | 680 | 5% | 3W |
| R063 | RS14GB3F681J | RES. METAL FILM | 680 | 5% | 3W |
| R064 | RD14BB2E104J | RES. CARBON | 100K | 5% | 1/4W |
| R065 | RD14BB2E201J | RES. CARBON | 200 | 5% | 1/4W |
| R066 | RD14BB2E182J | RES. CARBON | 1.8K | 5% | 1/4W |
| R067 | RD14BB2E272J | RES. CARBON | 2.7K | 5% | 1/4W |
| R070 | RD14BB2C153J | RES. CARBON | 15K | 5% | 1/6W |
| R071 | RD14BB2C101J | RES. CARBON | 100 | 5% | 1/6W |
| R101 | RD14BB2E105J | RES. CARBON | 1M | 5% | 1/4W |
| R102 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R103 | RN14BK2E5601F | RES. METAL FILM | 5.6K | 1% | 1/4W |
| R104 | RN14BK2E5601F | RES. METAL FILM | 5.6K | 1% | 1/4W |
| R105 | RD14BB2C120J | RES. CARBON | 12 | 5% | 1/6W |
| R106 | RD14BB2C510J | RES. CARBON | 51 | 5% | 1/6W |
| R107 | RD14BB2C510J | RES. CARBON | 51 | 5% | 1/6W |
| R108 | RD14BB2C392J | RES. CARBON | 3.9K | 5% | 1/6W |
| R109 | RD14BB2E102J | RES. CARBON | 1K | 5% | 1/4W |
| R110 | RD14BB2E302J | RES. CARBON | 3K | 5% | 1/4W |
| R111 | RD14BB2C220J | RES. CARBON | 22 | 5% | 1/6W |
| R112 | RD14BB2C243J | RES. CARBON | 24K | 5% | 1/6W |
| R113 | RD14BB2E302J | RES. CARBON | 3K | 5% | 1/4W |
| R114 | NO USE | | | | |
| R115 | RD14BB2C753J | RES. CARBON | 75K | 5% | 1/6W |
| R116 | RN14BK2C1301F | RES. METAL FILM | 1.3K | 1% | 1/6W |
| R117 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R118 | RD14BB2E182J | RES. CARBON | 1.8K | 5% | 1/4W |
| R119 | NO USE | | | | |
| R120 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R121 | RD14BB2E561J | RES. CARBON | 560 | 5% | 1/4W |
| R122 | NO USE | | | | |
| R123 | RD14BB2E333J | RES. CARBON | 33K | 5% | 1/4W |
| R124 | RD14BB2E470J | RES. CARBON | 47 | 5% | 1/4W |
| R125 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R126 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R127 | RD14BB2C222J | RES. CARBON | 2.2K | 5% | 1/6W |
| R128 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R129 | RN14BK2E2201F | RES. METAL FILM | 2.2K | 1% | 1/4W |
| R130 | RN14BK2E2201F | RES. METAL FILM | 2.2K | 1% | 1/4W |
| R131 | RD14BB2E750J | RES. CARBON | 75 | 5% | 1/4W |
| R132 | RN14BK2E2001F | RES. METAL FILM | 2K | 1% | 1/4W |
| R133 | RN14BK2E2001F | RES. METAL FILM | 2K | 1% | 1/4W |
| R134 | RD14BB2E510J | RES. CARBON | 51 | 5% | 1/4W |
| R135 | RD14BB2E511J | RES. CARBON | 510 | 5% | 1/4W |
| R136 | RD14BB2E123J | RES. CARBON | 12K | 5% | 1/4W |
| R137 | RD14BB2E472J | RES. CARBON | 4.7K | 5% | 1/4W |
| R138 | RD14BB2E332J | RES. CARBON | 3.3K | 5% | 1/4W |
| R139 | RD14BB2E332J | RES. CARBON | 3.3K | 5% | 1/4W |
| R140 | RD14BB2E471J | RES. CARBON | 470 | 5% | 1/4W |
| R141 | RD14BB2E471J | RES. CARBON | 470 | 5% | 1/4W |
| R142 | RD14BB2E471J | RES. CARBON | 470 | 5% | 1/4W |
| R143 | RD14BB2E471J | RES. CARBON | 470 | 5% | 1/4W |
| R144 | RD14BB2E272J | RES. CARBON | 2.7K | 5% | 1/4W |
| R145 | RD14BB2E153J | RES. CARBON | 15K | 5% | 1/4W |
| R146 | RD14BB2E153J | RES. CARBON | 15K | 5% | 1/4W |
| R147 | RD14BB2E272J | RES. CARBON | 2.7K | 5% | 1/4W |
| R148 | RD14BB2E223J | RES. CARBON | 22K | 5% | 1/4W |
| R149 | RD14BB2E682J | RES. CARBON | 6.8K | 5% | 1/4W |
| R150 | RD14BB2E102J | RES. CARBON | 1K | 5% | 1/4W |
| R151 | RD14BB2E102J | RES. CARBON | 1K | 5% | 1/4W |
| R152 | RD14BB2E151J | RES. CARBON | 150 | 5% | 1/4W |
| R153 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R154 | NO USE | | | | |
| R155 | RD14BB2E470J | RES. CARBON | 47 | 5% | 1/4W |
| R156 | NO USE | | | | |
| R157 | RD14BB2E362J | RES. CARBON | 3.6K | 5% | 1/4W |
| R158 | NO USE | | | | |
| R159 | RD14BB2E223J | RES. CARBON | 22K | 5% | 1/4W |
| R160 | RD14BB2C153J | RES. CARBON | 15K | 5% | 1/6W |
| R301 | RD14BB2E473J | RES. CARBON | 47K | 5% | 1/4W |
| R302 | RD14BB2E102J | RES. CARBON | 1K | 5% | 1/4W |
| R303 | RD14BB2E3R3J | RES. CARBON | 3.3 | 5% | 1/4W |
| R304 | RD14BB2E100J | RES. CARBON | 10 | 5% | 1/4W |
| R305 | RD14BB2E562J | RES. CARBON | 5.6K | 5% | 1/4W |
| R306 | RD14BB2E822J | RES. CARBON | 8.2K | 5% | 1/4W |
| R307 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R308 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R309 | RN14BK2E1502F | RES. METAL FILM | 15K | 1% | 1/4W |
| R310 | RN14BK2E1003F | RES. METAL FILM | 100K | 1% | 1/4W |
| R311 | RN14BK2E1602F | RES. METAL FILM | 16K | 1% | 1/4W |
| R312 | RN14BK2E1503F | RES. METAL FILM | 150K | 1% | 1/4W |
| R313 | RD14BY2H104J | RES. CARBON | 100K | 5% | 1/2W |
| R314 | RD14BY2H104J | RES. CARBON | 100K | 5% | 1/2W |
| S101 | S42-4509-05 | PUSH SWITCH | | | |
| S102 | S42-4509-05 | PUSH SWITCH | | | |
| TC001 | C05-0425-05 | CAP. TRIMMER | 70P | | |
| TC002 | C05-0425-05 | CAP. TRIMMER | 70P | | |
| TC101 | C05-0434-05 | CAP. TRIMMER | 20P | | |
| TC102 | C05-0434-05 | CAP. TRIMMER | 20P | | |
| TP001 | E23-0046-04 | TERMINAL | | | |
| TP002 | E23-0046-04 | TERMINAL | | | |
| TP003 | E23-0046-04 | TERMINAL | | | |
| TP101 | E23-0046-04 | TERMINAL | | | |
| TP102 | E23-0046-04 | TERMINAL | | | |
| TP103 | E23-0046-04 | TERMINAL | | | |
| TP104 | E23-0046-04 | TERMINAL | | | |
| U001 | 2SK389(GR) | FET, N-CHANNEL | | | |
| U101 | 2SK389(GR) | FET, N-CHANNEL | | | |
| U301 | UPC7805H | IC, VOLTAGE REGULATOR | | | |
| U302 | UPC7915HA | IC, VOLTAGE REGULATOR | | | |
| U303 | NJM7815A | IC, VOLTAGE REGULATOR | | | |
| U304 | NJM4558D | IC, OP AMP | | | |
| VR001 | R05-3509-05 | V.R. | 20K B | | |
| VR002 | R12-3541-05 | RES. SEMI FIXED | 20K B | | |
| VR003 | R12-0566-05 | RES. SEMI FIXED | 200 B | | |
| VR004 | R12-0565-05 | RES. SEMI FIXED | 100 B | | |
| VR005 | R12-0561-05 | RES. SEMI FIXED | 100 B | | |
| VR006 | R12-0565-05 | RES. SEMI FIXED | 100 B | | |
| VR014 | RN14BK2C1000F | RES. METAL FILM | 100 | 1% | 1/6W |
| VR101 | R05-3509-05 | V.R. | 20K B | | |
| VR102 | R12-3541-05 | RES. SEMI FIXED | 20K B | | |
| VR103 | R12-0565-05 | RES. SEMI FIXED | 100 B | | |
| VR104 | R12-0567-05 | RES. SEMI FIXED | 500 B | | |
| VR105 | R12-3541-05 | RES. SEMI FIXED | 20K B | | |
| VR114 | RN14BK2C1000F | RES. METAL FILM | 100 | 1% | 1/6W |

# PARTS LIST

## VERTICAL AMP & POWER UNIT

### X73-1720-03 (CS-1010)

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| | E23-0526-04 | EARTH PLATE | | | |
| | E31-2706-05 | LEAD WIRE WITH CONNECTOR | | | |
| | E33-4032-00 | WIRE ASSY | | | |
| | F01-0835-05 | HEAT SINK | | | |
| | F01-0836-04 | HEAT SINK | | | |
| | J25-2999-23 | PCB (UNMOUNTED) | | | |
| | J61-0517-05 | STADOFF CLIP | | | |
| | N19-0191-05 | WASHER NONMETAL | | | |
| | N19-0702-04 | WASHER | | | |
| | N30-3008-46 | SCREW, PAN HD | M 3X8 | | |
| | R92-0150-05 | JUMPING RES. | ZERO OHM | | |
| C006 | CC45SL1H471J | CAP. CERAMIC | 470P | 5% | 50V |
| C007 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |
| C008 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C009 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C010 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C011 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C012 | NO USE | | | | |
| C013 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |
| C014 | CE04W1E220M | CAP. ELECTRO | 22 | 20% | 25V |
| C015 | NO USE | | | | |
| C016 | CE04W1E220M | CAP. ELECTRO | 22 | 20% | 25V |
| C017 | CE04BW1E220M | CAP. ELECTRO | 22 | 20% | 25V |
| C021 | CC45CH1H020C | CAP. CERAMIC | 2P | 0.25P | 50V |
| C022 | CC45CH1H1R5C | CAP. CERAMIC | 1.5P | 0.25P | 50V |
| C023 | CK45B1H102K | CAP. CERAMIC | 1000P | 10% | 50V |
| C301 | CE04W1V222M | CAP. ELECTRO | 2200 | 20% | 35V |
| C302 | CE04W1V222M | CAP. ELECTRO | 2200 | 20% | 35V |
| C303 | CE04W1E222M | CAP. ELECTRO | 2200 | 20% | 25V |
| C304 | C90-0910-05 | CAP. ELECTRO | 100 | 20% | 200V |
| C305 | CE04W2E470 | CAP. ELECTRO | 47 | | 250V |
| C306 | CE04W1A101M | CAP. ELECTRO | 100 | 20% | 10V |
| C307 | CE04W1E101M | CAP. ELECTRO | 100 | 20% | 25V |
| C308 | CE04W1E101M | CAP. ELECTRO | 100 | 20% | 25V |
| C309 | CE04W2C100 | CAP. ELECTRO | 10 | | 160V |
| C310 | CE04W2E010 | CAP. ELECTRO | 1 | | 250V |
| C311 | CE04BW1H010M | CAP. ELECTRO | 1 | 20% | 50V |
| C312 | CE04W1H010M | CAP. ELECTRO | 1 | 20% | 50V |
| C313 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |
| C314 | CE04W1H010M | CAP. ELECTRO | 1 | 20% | 50V |
| C315 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |
| C316 | CE04W1H010M | CAP. ELECTRO | 1 | 20% | 50V |
| C317 | CQ92FM1H104K | CAP. MYLAR | 0.1 | 10% | 50V |
| C318 | CK45B1H102K | CAP. CERAMIC | 1000P | 10% | 50V |
| C319 | CK45B1H102K | CAP. CERAMIC | 1000P | 10% | 50V |
| C320 | CK45B2H103K | CAP. CERAMIC | 0.01 | 10% | 500V |
| C321 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |
| C324 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |
| D001 | DS442X | DIODE | | | |
| D002 | DS442X | DIODE | | | |
| D003 | DS442X | DIODE | | | |
| D301 | S2VB40F1 | DIODE | | | |
| D302 | S2VB40F1 | DIODE | | | |
| D303 | S1VB60 | DIODE | | | |
| D304 | S1VB60 | DIODE | | | |
| D305 | DS442X | DIODE | | | |
| D306 | DS442X | DIODE | | | |
| D307 | V06B | DIODE | | | |
| L001 | L40-1025-03 | FERRI INDUCTOR | | | |
| L002 | L40-1025-03 | FERRI INDUCTOR | | | |
| P001 | E40-0473-05 | PIN CONNECTOR | 4 P | | |
| P002 | E40-0273-05 | PIN CONNECTOR | 2 P | | |
| P003 | E04-0154-05 | BNC RECEPTACLE | | | |
| P004 | E23-0046-04 | TERMINAL | | | |
| P005 | E23-0046-04 | TERMINAL | | | |
| P301 | E40-0930-05 | PIN CONNECTOR | 9 P | | |
| P302 | E40-1116-05 | PIN CONNECTOR | 11 P | | |
| P303 | E40-1116-05 | PIN CONNECTOR | 11 P | | |
| Q002 | 2SA1005(K) | TR. SI, PNP | | | |
| Q003 | 2SA1005(K) | TR. SI, PNP | | | |
| Q004 | 2SC2786(K) | TR. SI, NPN | | | |
| Q005 | 2SC2785(F) | TR. SI, NPN | | | |

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| Q007 | 2SC2785(F) | TR. SI, NPN | | | |
| Q008 | 2SA1005(K) | TR. SI, PNP | | | |
| Q009 | 2SC2785(F) | TR. SI, NPN | | | |
| Q010 | 2SC2785(F) | TR. SI, NPN | | | |
| Q011 | 2SC2785(F) | TR. SI, NPN | | | |
| Q012 | 2SC2785(F) | TR. SI, NPN | | | |
| Q013 | 2SC2785(F) | TR. SI, NPN | | | |
| Q014 | 2SC2785(F) | TR. SI, NPN | | | |
| Q015 | 2SC1973 | TR. SI, NPN | | | |
| Q016 | 2SC1973 | TR. SI, NPN | | | |
| Q017 | 2SC2912(R,S) | TR. SI, NPN | | | |
| Q018 | 2SC2912(R,S) | TR. SI, NPN | | | |
| Q301 | 2SA1009A(J,K) | TR. SI, PNP | | | |
| Q302 | 2SA1009A(J,K) | TR. SI, PNP | | | |
| Q303 | 2SA1175(F) | TR. SI, PNP | | | |
| Q304 | 2SA1175(F) | TR. SI, PNP | | | |
| Q305 | 2SC2271(E) | TR. SI, NPN | | | |
| Q306 | 2SC2271(E) | TR. SI, NPN | | | |
| R001 | RD14BB2E105J | RES. CARBON | 1M | 5% | 1/4W |
| R002 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R003 | RN14BK2E5601F | RES. METAL FILM | 5.6K | 1% | 1/4W |
| R004 | RN14BK2E5601F | RES. METAL FILM | 5.6K | 1% | 1/4W |
| R005 | RD14BB2C120J | RES. CARBON | 12 | 5% | 1/6W |
| R006 | RD14BB2C510J | RES. CARBON | 51 | 5% | 1/6W |
| R007 | RD14BB2C510J | RES. CARBON | 51 | 5% | 1/6W |
| R008 | RD14BB2E392J | RES. CARBON | 3.9K | 5% | 1/4W |
| R009 | RD14BB2E102J | RES. CARBON | 1K | 5% | 1/4W |
| R010 | RD14BB2E302J | RES. CARBON | 3K | 5% | 1/4W |
| R011 | RD14BB2C220J | RES. CARBON | 22 | 5% | 1/6W |
| R012 | RD14BB2C243J | RES. CARBON | 24K | 5% | 1/6W |
| R013 | RD14BB2E302J | RES. CARBON | 3K | 5% | 1/4W |
| R014 | RN14BK2C1000F | RES. METAL FILM | 100 | 1% | 1/6W |
| R015 | RN14BK2C1301F | RES. METAL FILM | 1.3K | 1% | 1/6W |
| R016 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R017 | RD14BB2C302J | RES. CARBON | 3K | 5% | 1/6W |
| R018 | RD14BB2C753J | RES. CARBON | 75K | 5% | 1/6W |
| R019 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R020 | RD14BB2E331J | RES. CARBON | 330 | 5% | 1/4W |
| R021 | RD14BB2E331J | RES. CARBON | 330 | 5% | 1/4W |
| R022 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R023 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R024 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R025 | RD14BB2E510J | RES. CARBON | 51 | 5% | 1/4W |
| R026 | RD14BB2E472J | RES. CARBON | 4.7K | 5% | 1/4W |
| R027 | RD14BB2E472J | RES. CARBON | 4.7K | 5% | 1/4W |
| R028 | RD14BB2E270J | RES. CARBON | 27 | 5% | 1/4W |
| R029 | RD14BB2E270J | RES. CARBON | 27 | 5% | 1/4W |
| R030 | RD14BB2E300J | RES. CARBON | 30 | 5% | 1/4W |
| R031 | RD14BB2E470J | RES. CARBON | 47 | 5% | 1/4W |
| R032 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R033 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R034 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R035 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R036 | RN14BK2E2201F | RES. METAL FILM | 2.2K | 1% | 1/4W |
| R037 | RN14BK2E2201F | RES. METAL FILM | 2.2K | 1% | 1/4W |
| R038 | RD14BB2E750J | RES. CARBON | 75 | 5% | 1/4W |
| R039 | RD14BB2E471J | RES. CARBON | 470 | 5% | 1/4W |
| R040 | RD14BB2E682J | RES. CARBON | 6.8K | 5% | 1/4W |
| R041 | RD14BB2E332J | RES. CARBON | 3.3K | 5% | 1/4W |
| R042 | RD14BB2E471J | RES. CARBON | 470 | 5% | 1/4W |
| R043 | RD14BB2E471J | RES. CARBON | 470 | 5% | 1/4W |
| R044 | RN14BK2E8200F | RES. METAL FILM | 820 | 1% | 1/4W |
| R045 | RN14BK2E8200F | RES. METAL FILM | 820 | 1% | 1/4W |
| R046 | RD14BB2E162J | RES. CARBON | 1.6K | 5% | 1/4W |
| R047 | NO USE | | | | |
| R048 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R049 | RD14BB2E302J | RES. CARBON | 3K | 5% | 1/4W |
| R050 | RD14BB2E302J | RES. CARBON | 3K | 5% | 1/4W |
| R051 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R052 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R053 | RD14BB2E220J | RES. CARBON | 22 | 5% | 1/4W |
| R054 | RD14BB2E221J | RES. CARBON | 220 | 5% | 1/4W |
| R055 | RD14BB2E221J | RES. CARBON | 220 | 5% | 1/4W |
| R056 | RD14BB2E750J | RES. CARBON | 75 | 5% | 1/4W |
| R057 | RD14BB2E121J | RES. CARBON | 120 | 5% | 1/4W |
| R058 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R059 | RD14BB2E101J | RES. CARBON | 100 | 5% | 1/4W |
| R060 | RS14GB3F681J | RES. METAL FILM | 680 | 5% | 3W |
| R061 | RS14GB3F681J | RES. METAL FILM | 680 | 5% | 3W |
| R062 | RS14GB3F681J | RES. METAL FILM | 680 | 5% | 3W |
| R063 | RS14GB3F681J | RES. METAL FILM | 680 | 5% | 3W |
| R064 | RD14BB2E104J | RES. CARBON | 100K | 5% | 1/4W |
| R065 | RD14BB2E201J | RES. CARBON | 200 | 5% | 1/4W |

# PARTS LIST

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| R066 | RD14BB2E182J | RES. CARBON | 1.8K | 5% | 1/4W |
| R067 | RD14BB2E272J | RES. CARBON | 2.7K | 5% | 1/4W |
| R070 | RD14BB2C153J | RES. CARBON | 15K | 5% | 1/6W |
| R071 | RD14BB2C104J | RES. CARBON | 100 | 5% | 1/6W |
| R301 | RD14BB2E473J | RES. CARBON | 47K | 5% | 1/4W |
| R302 | RD14BB2E102J | RES. CARBON | 1K | 5% | 1/4W |
| R303 | RD14BB2E3R3J | RES. CARBON | 3.3 | 5% | 1/4W |
| R304 | RD14BB2E100J | RES. CARBON | 10 | 5% | 1/4W |
| R305 | RD14BB2E562J | RES. CARBON | 5.6K | 5% | 1/4W |
| R306 | RD14BB2E822J | RES. CARBON | 8.2K | 5% | 1/4W |
| R307 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R308 | RD14BB2E222J | RES. CARBON | 2.2K | 5% | 1/4W |
| R309 | RN14BK2E1502F | RES. METAL FILM | 15K | 1% | 1/4W |
| R310 | RN14BK2E1003F | RES. METAL FILM | 100K | 1% | 1/4W |
| R311 | RN14BK2E1602F | RES. METAL FILM | 16K | 1% | 1/4W |
| R312 | RN14BK2E1503F | RES. METAL FILM | 150K | 1% | 1/4W |
| R313 | RD14BY2H104J | RES. CARBON | 100K | 5% | 1/2W |
| R314 | RD14BY2H104J | RES. CARBON | 100K | 5% | 1/2W |
| TC001 | C05-0425-05 | CAP. TRIMMER | 70P | | |
| TC002 | C05-0425-05 | CAP. TRIMMER | 70P | | |
| TC101 | C05-0434-05 | CAP. TRIMMER | 20P | | |
| TP001 | E23-0046-04 | TERMINAL | | | |
| TP002 | E23-0046-04 | TERMINAL | | | |
| TP003 | E23-0046-04 | TERMINAL | | | |
| U001 | 2SK389(GR) | FET, N-CHANNEL | | | |
| U301 | UPC7805H | IC, VOLTAGE REGULATOR | | | |
| U302 | UPC7915HA | IC, VOLTAGE REGULATOR | | | |
| U303 | NJM7815A | IC, VOLTAGE REGULATOR | | | |
| U304 | NJM4558D | IC, OP AMP | | | |
| VR001 | R05-3509-05 | V.R. | 20K B | | |
| VR002 | R12-3541-05 | RES. SEMI FIXED | 20K B | | |
| VR003 | R12-0566-05 | RES. SEMI FIXED | 200 B | | |
| VR004 | R12-0565-05 | RES. SEMI FIXED | 100 B | | |
| VR005 | R12-0561-05 | RES. SEMI FIXED | 100 B | | |
| VR006 | R12-0565-05 | RES. SEMI FIXED | 100 B | | |

## VERTICAL AMP & POWER UNIT

### X73-1720-04 (CS-1021)

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| | E23-0526-04 | EARTH PLATE | | | |
| | E31-2584-05 | LEAD WIRE WITH CONNECTOR | | | |
| | E31-2585-05 | LEAD WIRE WITH CONNECTOR | | | |
| | E31-2706-05 | LEAD WIRE WITH CONNECTOR | | | |
| | E33-4031-00 | WIRE ASSY | | | |
| | F01-0836-04 | HEAT SINK | | | |
| | J25-2999-23 | PCB (UNMOUNTED) | | | |
| | N19-0191-05 | WASHER NONMETAL | | | |
| | N19-0702-04 | WASHER | | | |
| | N30-3008-46 | SCREW, PAN HD | M 3X8 | | |
| | R92-0150-05 | JUMPING RES. | ZERO OHM | | |
| C006 | CC45CH1H121J | CAP. CERAMIC | 120P | 5% | 50V |
| C007 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |
| C008 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C009 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C013 | CC45CH1H470J | CAP. CERAMIC | 47P | 5% | 50V |
| C014 | CE04W1E220M | CAP. ELECTRO | 22 | 20% | 25V |
| C015 | NO USE | | | | |
| C016 | CE04W1E220M | CAP. ELECTRO | 22 | 20% | 25V |
| C021 | CC45CH1H020C | CAP. CERAMIC | 2P | 0.25P | 50V |
| C022 | CC45CH1H1R5C | CAP. CERAMIC | 1.5P | 0.25P | 50V |
| C023 | CK45B1H102K | CAP. CERAMIC | 1000P | 10% | 50V |
| C103 | CC45CH1H100D | CAP. CERAMIC | 10P | 0.5P | 50V |
| C104 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C105 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C106 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C107 | CE04W1E470M | CAP. ELECTRO | 47 | 20% | 25V |
| C108 | NO USE | | | | |
| C109 | CC45CH1H470J | CAP. CERAMIC | 47P | 5% | 50V |
| C110 | CC45CH1H470J | CAP. CERAMIC | 47P | 5% | 50V |
| C111 | CE04BW1H010M | CAP. ELECTRO | 1 | 20% | 50V |
| C112 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |
| C116 | CC45CH1H020C | CAP. CERAMIC | 2P | 0.25P | 50V |
| C117 | CC45CH1H1R5C | CAP. CERAMIC | 1.5P | 0.25P | 50V |
| C118 | CK45B1H102K | CAP. CERAMIC | 1000P | 10% | 50V |
| C119 | NO USE | | | | |
| C120 | CC45CH1H121J | CAP. CERAMIC | 120P | 5% | 50V |
| C301 | CE04W1V222M | CAP. ELECTRO | 2200 | 20% | 35V |
| C302 | CE04W1V222M | CAP. ELECTRO | 2200 | 20% | 35V |
| C303 | CE04W1E222M | CAP. ELECTRO | 2200 | 20% | 25V |
| C304 | C90-0910-05 | CAP. ELECTRO | 100 | 20% | 200V |
| C305 | CE04W2E470 | CAP. ELECTRO | 47 | | 250V |
| C306 | CE04W1A101M | CAP. ELECTRO | 100 | 20% | 10V |
| C307 | CE04W1E101M | CAP. ELECTRO | 100 | 20% | 25V |
| C308 | CE04W1E101M | CAP. ELECTRO | 100 | 20% | 25V |
| C309 | CE04W2C100 | CAP. ELECTRO | 10 | | 160V |
| C310 | CE04W2E010 | CAP. ELECTRO | 1 | | 250V |
| C311 | CE04BW1H010M | CAP. ELECTRO | 1 | 20% | 50V |
| C312 | CE04W1H010M | CAP. ELECTRO | 1 | 20% | 50V |
| C313 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |
| C314 | CE04W1H010M | CAP. ELECTRO | 1 | 20% | 50V |
| C315 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |
| C316 | CE04W1H010M | CAP. ELECTRO | 1 | 20% | 50V |
| C317 | CQ92FM1H104K | CAP. MYLAR | 0.1 | 10% | 50V |
| C318 | CK45B1H102K | CAP. CERAMIC | 1000P | 10% | 50V |
| C319 | CK45B1H102K | CAP. CERAMIC | 1000P | 10% | 50V |
| C320 | CK45B2H103K | CAP. CERAMIC | 0.01 | 10% | 500V |
| C321 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |
| C324 | CK45B1H103K | CAP. CERAMIC | 0.01 | 10% | 50V |
| D001 | DS442X | DIODE | | | |
| D101 | DS442X | DIODE | | | |
| D102 | DS442X | DIODE | | | |
| D103 | DS442X | DIODE | | | |
| D104 | DS442X | DIODE | | | |
| D105 | DS442X | DIODE | | | |
| D106 | DS442X | DIODE | | | |
| D107 | DS442X | DIODE | | | |
| D108 | MTZ10JC | DIODE, ZENER | 10V | | |
| D301 | S2VB40F1 | DIODE | | | |
| D302 | S2VB40F1 | DIODE | | | |
| D303 | S1VB60 | DIODE | | | |
| D304 | S1VB60 | DIODE | | | |

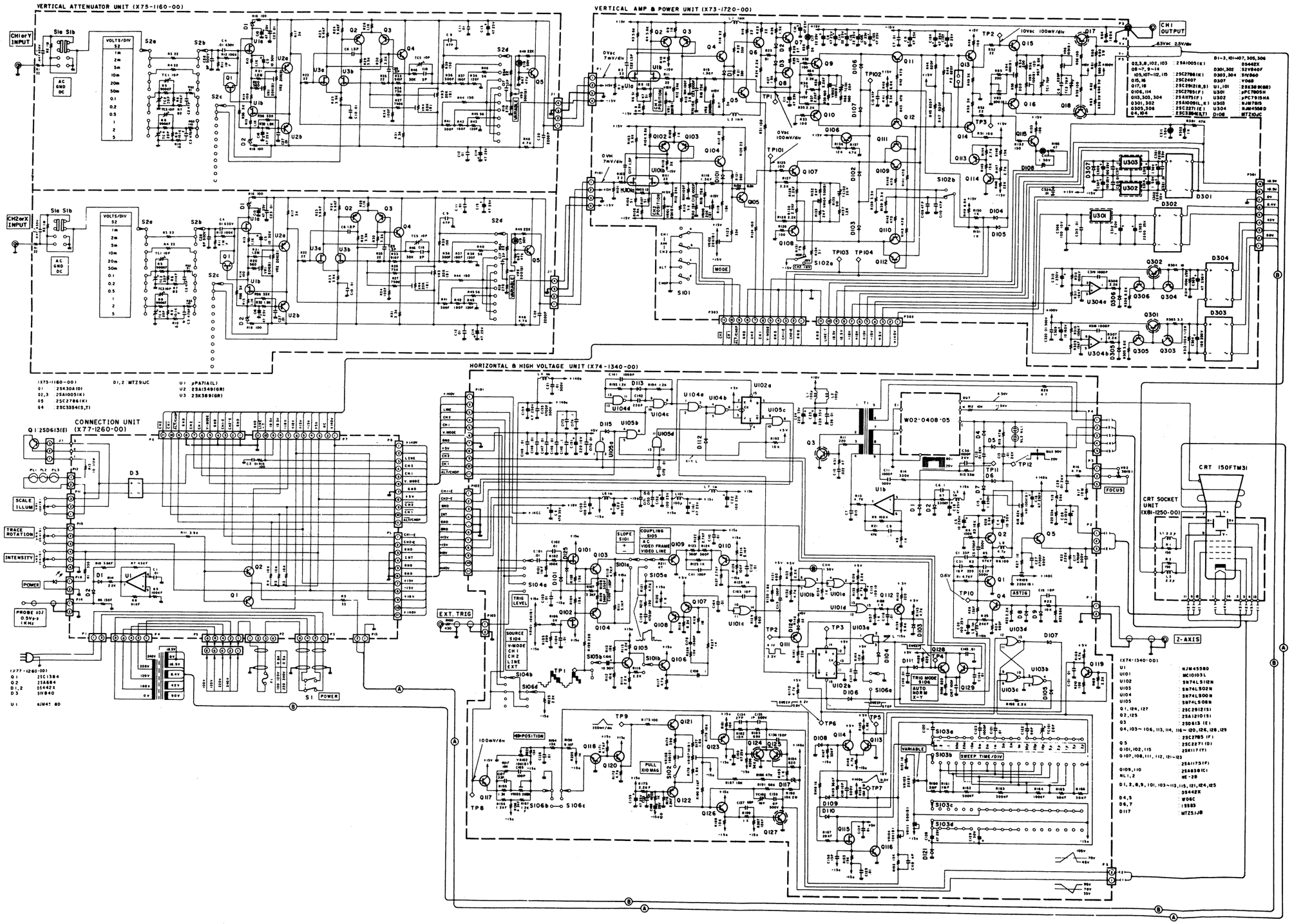
# PARTS LIST

| REF.NO | PARTS NO | NAME & DESCRIPTION |
|---|---|---|
| D305 | DS442X | DIODE |
| D306 | DS442X | DIODE |
| D307 | V06B | DIODE |
| P001 | E40-0473-05 | PIN CONNECTOR 4 P |
| P002 | E40-0273-05 | PIN CONNECTOR 2 P |
| P101 | E40-0473-05 | PIN CONNECTOR 4 P |
| P301 | E40-0930-05 | PIN CONNECTOR 9 P |
| P302 | E40-1116-05 | PIN CONNECTOR 11 P |
| P303 | E40-1116-05 | PIN CONNECTOR 11 P |
| Q002 | 2SA1005(K) | TR. SI, PNP |
| Q003 | 2SA1005(K) | TR. SI, PNP |
| Q004 | 2SC3354(T,S) | TR. SI, NPN |
| Q005 | 2SC2786(K) | TR. SI, NPN |
| Q009 | 2SC2786(K) | TR. SI, NPN |
| Q010 | 2SC2786(K) | TR. SI, NPN |
| Q011 | 2SC2786(K) | TR. SI, NPN |
| Q012 | 2SC2786(K) | TR. SI, NPN |
| Q013 | 2SC2786(K) | TR. SI, NPN |
| Q014 | 2SC2786(K) | TR. SI, NPN |
| Q015 | 2SC2407 | TR. SI, NPN |
| Q016 | 2SC2407 | TR. SI, NPN |
| Q102 | 2SA1005(K) | TR. SI, PNP |
| Q103 | 2SA1005(K) | TR. SI, PNP |
| Q104 | 2SC3354(T,S) | TR. SI, NPN |
| Q105 | 2SC2786(K) | TR. SI, NPN |
| Q106 | 2SC2785(F) | TR. SI, NPN |
| Q107 | 2SC2786(K) | TR. SI, NPN |
| Q108 | 2SC2786(K) | TR. SI, NPN |
| Q109 | 2SC2786(K) | TR. SI, NPN |
| Q110 | 2SC2786(K) | TR. SI, NPN |
| Q111 | 2SC2786(K) | TR. SI, NPN |
| Q112 | 2SC2786(K) | TR. SI, NPN |
| Q113 | 2SA1175(F) | TR. SI, PNP |
| Q114 | 2SC2785(F) | TR. SI, NPN |
| Q115 | 2SC2786(K) | TR. SI, NPN |
| Q301 | 2SA1009A(J,K) | TR. SI, PNP |
| Q302 | 2SA1009A(J,K) | TR. SI, PNP |
| Q303 | 2SA1175(F) | TR. SI, PNP |
| Q304 | 2SA1175(F) | TR. SI, PNP |
| Q305 | 2SC2271(E) | TR. SI, NPN |
| Q306 | 2SC2271(E) | TR. SI, NPN |
| R001 | RD14BB2E105J | RES. CARBON 1M 5% 1/4W |
| R002 | RD14BB2E220J | RES. CARBON 22 5% 1/4W |
| R003 | RN14BK2E5601F | RES. METAL FILM 5.6K 1% 1/4W |
| R004 | RN14BK2E5601F | RES. METAL FILM 5.6K 1% 1/4W |
| R005 | RD14BB2C120J | RES. CARBON 12 5% 1/6W |
| R006 | RD14BB2C510J | RES. CARBON 51 5% 1/6W |
| R007 | RD14BB2C510J | RES. CARBON 51 5% 1/6W |
| R008 | RD14BB2E392J | RES. CARBON 3.9K 5% 1/4W |
| R009 | RD14BB2E102J | RES. CARBON 1K 5% 1/4W |
| R010 | RD14BB2E302J | RES. CARBON 3K 5% 1/4W |
| R011 | RD14BB2C220J | RES. CARBON 22 5% 1/6W |
| R012 | RD14BB2C243J | RES. CARBON 24K 5% 1/6W |
| R013 | RD14BB2E302J | RES. CARBON 3K 5% 1/4W |
| R016 | RD14BB2E220J | RES. CARBON 22 5% 1/4W |
| R017 | RD14BB2C302J | RES. CARBON 3K 5% 1/6W |
| R018 | RD14BB2C753J | RES. CARBON 75K 5% 1/6W |
| R019 | RD14BB2E220J | RES. CARBON 22 5% 1/4W |
| R020 | NO USE | |
| R021 | RD14BB2E331J | RES. CARBON 330 5% 1/4W |
| R031 | RD14BB2E151J | RES. CARBON 150 5% 1/4W |
| R032 | RD14BB2E101J | RES. CARBON 100 5% 1/4W |
| R033 | RD14BB2E101J | RES. CARBON 100 5% 1/4W |
| R034 | RD14BB2E222J | RES. CARBON 2.2K 5% 1/4W |
| R035 | RD14BB2E222J | RES. CARBON 2.2K 5% 1/4W |
| R036 | RN14BK2E2201F | RES. METAL FILM 2.2K 1% 1/4W |
| R037 | RN14BK2E2201F | RES. METAL FILM 2.2K 1% 1/4W |
| R038 | RD14BB2E750J | RES. CARBON 75 5% 1/4W |
| R039 | RD14BB2E431J | RES. CARBON 430 5% 1/4W |
| R040 | RD14BB2E682J | RES. CARBON 6.8K 5% 1/4W |
| R041 | RD14BB2E332J | RES. CARBON 3.3K 5% 1/4W |
| R042 | RD14BB2E471J | RES. CARBON 470 5% 1/4W |
| R043 | RD14BB2E471J | RES. CARBON 470 5% 1/4W |
| R044 | RN14BK2E8200F | RES. METAL FILM 820 1% 1/4W |
| R045 | RN14BK2E8200F | RES. METAL FILM 820 1% 1/4W |
| R046 | RN14BK2E8200F | RES. METAL FILM 820 1% 1/4W |
| R047 | RN14BK2E8200F | RES. METAL FILM 820 1% 1/4W |
| R048 | RD14BB2E101J | RES. CARBON 100 5% 1/4W |
| R049 | RD14BB2E302J | RES. CARBON 3K 5% 1/4W |
| R050 | RD14BB2E302J | RES. CARBON 3K 5% 1/4W |
| R051 | RD14BB2E101J | RES. CARBON 100 5% 1/4W |
| R052 | RD14BB2E220J | RES. CARBON 22 5% 1/4W |
| R053 | RD14BB2E220J | RES. CARBON 22 5% 1/4W |
| R054 | RD14BB2E331J | RES. CARBON 330 5% 1/4W |
| R055 | RD14BB2E331J | RES. CARBON 330 5% 1/4W |
| R056 | RD14BB2E750J | RES. CARBON 75 5% 1/4W |
| R065 | RD14BB2E201J | RES. CARBON 200 5% 1/4W |
| R066 | RD14BB2E201J | RES. CARBON 200 5% 1/4W |
| R067 | RD14BB2E272J | RES. CARBON 2.7K 5% 1/4W |
| R070 | RD14BB2C153J | RES. CARBON 15K 5% 1/6W |
| R101 | RD14BB2E105J | RES. CARBON 1M 5% 1/4W |
| R102 | RD14BB2E220J | RES. CARBON 22 5% 1/4W |
| R103 | RN14BK2E5601F | RES. METAL FILM 5.6K 1% 1/4W |
| R104 | RN14BK2E5601F | RES. METAL FILM 5.6K 1% 1/4W |
| R105 | RD14BB2C120J | RES. CARBON 12 5% 1/6W |
| R106 | RD14BB2C510J | RES. CARBON 51 5% 1/6W |
| R107 | RD14BB2C510J | RES. CARBON 51 5% 1/6W |
| R108 | RD14BB2C392J | RES. CARBON 3.9K 5% 1/6W |
| R109 | RD14BB2E102J | RES. CARBON 1K 5% 1/4W |
| R110 | RD14BB2E302J | RES. CARBON 3K 5% 1/4W |
| R111 | RD14BB2C220J | RES. CARBON 22 5% 1/6W |
| R112 | RD14BB2C243J | RES. CARBON 24K 5% 1/6W |
| R113 | RD14BB2E302J | RES. CARBON 3K 5% 1/4W |
| R114 | NO USE | |
| R115 | RD14BB2C753J | RES. CARBON 75K 5% 1/6W |
| R116 | NO USE | |
| R117 | RD14BB2E220J | RES. CARBON 22 5% 1/4W |
| R118 | RD14BB2E182J | RES. CARBON 1.8K 5% 1/4W |
| R119 | NO USE | |
| R120 | RD14BB2E220J | RES. CARBON 22 5% 1/4W |
| R121 | RD14BB2E561J | RES. CARBON 560 5% 1/4W |
| R122 | NO USE | |
| R123 | RD14BB2E333J | RES. CARBON 33K 5% 1/4W |
| R124 | RD14BB2E151J | RES. CARBON 150 5% 1/4W |
| R125 | RD14BB2E101J | RES. CARBON 100 5% 1/4W |
| R126 | RD14BB2E101J | RES. CARBON 100 5% 1/4W |
| R127 | RD14BB2C222J | RES. CARBON 2.2K 5% 1/6W |
| R128 | RD14BB2E222J | RES. CARBON 2.2K 5% 1/4W |
| R129 | RN14BK2E2201F | RES. METAL FILM 2.2K 1% 1/4W |
| R130 | RN14BK2E2201F | RES. METAL FILM 2.2K 1% 1/4W |
| R131 | RD14BB2E750J | RES. CARBON 75 5% 1/4W |
| R132 | RN14BK2E2001F | RES. METAL FILM 2K 1% 1/4W |
| R133 | RN14BK2E2001F | RES. METAL FILM 2K 1% 1/4W |
| R134 | RD14BB2E510J | RES. CARBON 51 5% 1/4W |
| R135 | RD14BB2E511J | RES. CARBON 510 5% 1/4W |
| R136 | RD14BB2E123J | RES. CARBON 12K 5% 1/4W |
| R137 | RD14BB2E472J | RES. CARBON 4.7K 5% 1/4W |
| R138 | RD14BB2E332J | RES. CARBON 3.3K 5% 1/4W |
| R139 | RD14BB2E332J | RES. CARBON 3.3K 5% 1/4W |
| R140 | RD14BB2E471J | RES. CARBON 470 5% 1/4W |
| R141 | RD14BB2E471J | RES. CARBON 470 5% 1/4W |
| R142 | RD14BB2E471J | RES. CARBON 470 5% 1/4W |
| R143 | RD14BB2E471J | RES. CARBON 470 5% 1/4W |
| R144 | RD14BB2E272J | RES. CARBON 2.7K 5% 1/4W |
| R145 | RD14BB2E153J | RES. CARBON 15K 5% 1/4W |
| R146 | RD14BB2E153J | RES. CARBON 15K 5% 1/4W |
| R147 | RD14BB2E272J | RES. CARBON 2.7K 5% 1/4W |
| R148 | RD14BB2E223J | RES. CARBON 22K 5% 1/4W |
| R149 | RD14BB2E682J | RES. CARBON 6.8K 5% 1/4W |
| R150 | RD14BB2E102J | RES. CARBON 1K 5% 1/4W |
| R151 | RD14BB2E102J | RES. CARBON 1K 5% 1/4W |
| R152 | RD14BB2E151J | RES. CARBON 150 5% 1/4W |
| R153 | RD14BB2E101J | RES. CARBON 100 5% 1/4W |
| R154 | NO USE | |
| R155 | RD14BB2E470J | RES. CARBON 47 5% 1/4W |
| R156 | NO USE | |
| R157 | RD14BB2E331J | RES. CARBON 330 5% 1/4W |
| R158 | NO USE | |
| R159 | RD14BB2E682J | RES. CARBON 6.8K 5% 1/4W |
| R160 | RD14BB2C153J | RES. CARBON 15K 5% 1/6W |
| R301 | RD14BB2E473J | RES. CARBON 47K 5% 1/4W |
| R302 | RD14BB2E102J | RES. CARBON 1K 5% 1/4W |
| R303 | RD14BB2E3R3J | RES. CARBON 3.3 5% 1/4W |
| R304 | RD14BB2E100J | RES. CARBON 10 5% 1/4W |
| R305 | RD14BB2E562J | RES. CARBON 5.6K 5% 1/4W |
| R306 | RD14BB2E822J | RES. CARBON 8.2K 5% 1/4W |
| R307 | RD14BB2E222J | RES. CARBON 2.2K 5% 1/4W |
| R308 | RD14BB2E222J | RES. CARBON 2.2K 5% 1/4W |

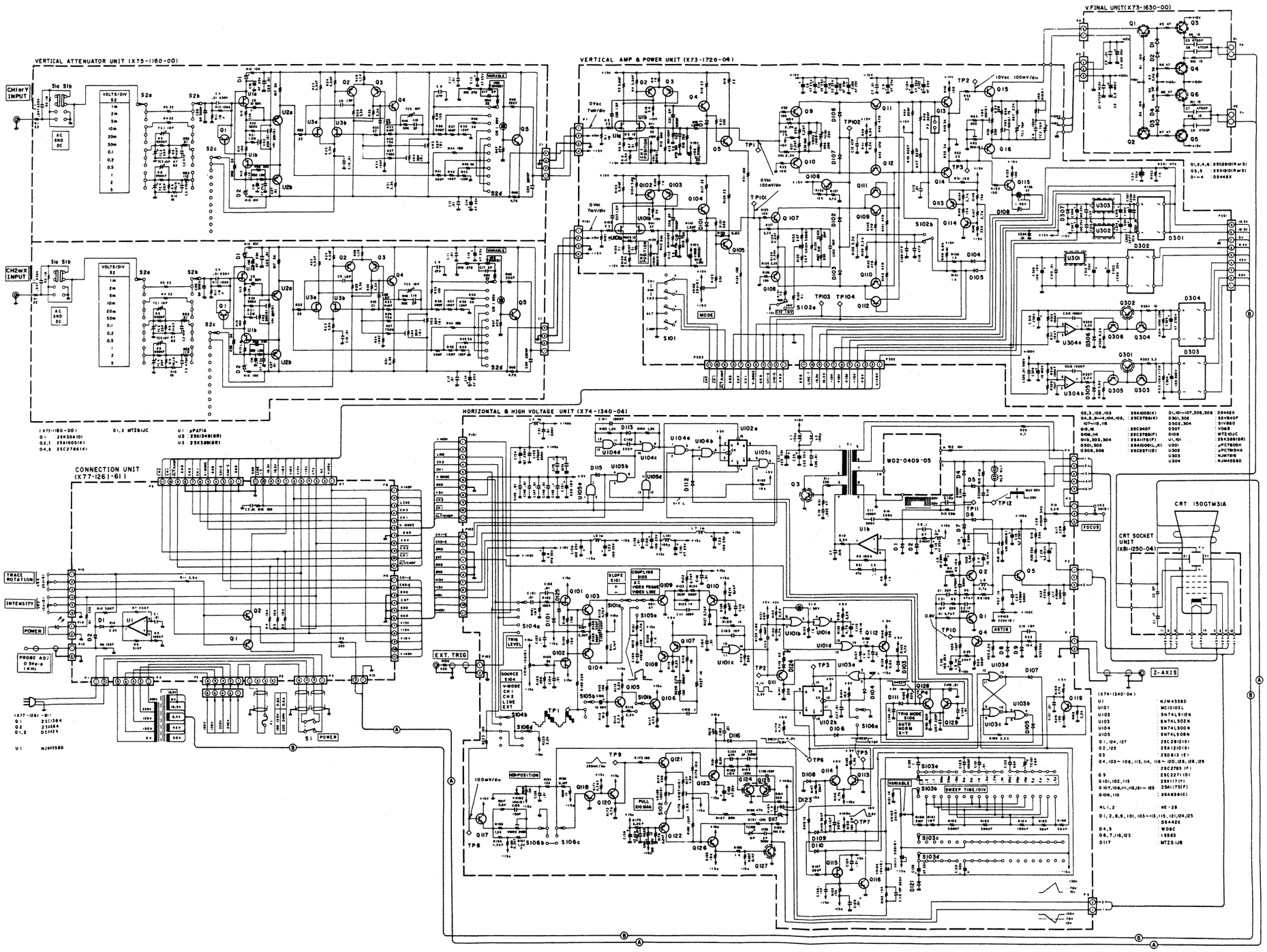
# PARTS LIST

| REF.NO | PARTS NO | NAME & DESCRIPTION | | | |
|---|---|---|---|---|---|
| R309 | RN14BK2E1502F | RES. METAL FILM | 15K | 1% | 1/4W |
| R310 | RN14BK2E1003F | RES. METAL FILM | 100K | 1% | 1/4W |
| R311 | RN14BK2E1602F | RES. METAL FILM | 16K | 1% | 1/4W |
| R312 | RN14BK2E1503F | RES. METAL FILM | 150K | 1% | 1/4W |
| R313 | RD14BY2H104J | RES. CARBON | 100K | 5% | 1/2W |
| R314 | RD14BY2H104J | RES. CARBON | 100K | 5% | 1/2W |
| S101 | S42-4509-05 | PUSH SWITCH | | | |
| S102 | S42-4509-05 | PUSH SWITCH | | | |
| TC001 | C05-0425-05 | CAP. TRIMMER | 70P | | |
| TC002 | C05-0425-05 | CAP. TRIMMER | 70P | | |
| TC101 | C05-0435-05 | CAP. TRIMMER | 30P | | |
| TC102 | C05-0434-05 | CAP. TRIMMER | 20P | | |
| TP001 | E23-0046-04 | TERMINAL | | | |
| TP002 | E23-0046-04 | TERMINAL | | | |
| TP003 | E23-0046-04 | TERMINAL | | | |
| TP101 | E23-0046-04 | TERMINAL | | | |
| TP102 | E23-0046-04 | TERMINAL | | | |
| TP103 | E23-0046-04 | TERMINAL | | | |
| TP104 | E23-0046-04 | TERMINAL | | | |
| U001 | 2SK389(GR) | FET, N-CHANNEL | | | |
| U101 | 2SK389(GR) | FET, N-CHANNEL | | | |
| U301 | UPC7805H | IC, VOLTAGE REGULATOR | | | |
| U302 | UPC7915HA | IC, VOLTAGE REGULATOR | | | |
| U303 | NJM7815A | IC, VOLTAGE REGULATOR | | | |
| U304 | NJM4558D | IC, OP AMP | | | |
| VR001 | R05-3509-05 | V.R. | 20K B | | |
| VR002 | R12-3541-05 | RES. SEMI FIXED | 20K B | | |
| VR003 | R12-0566-05 | RES. SEMI FIXED | 200 B | | |
| VR004 | R12-0565-05 | RES. SEMI FIXED | 100 B | | |
| VR005 | R12-0561-05 | RES. SEMI FIXED | 100 B | | |
| VR006 | R12-0565-05 | RES. SEMI FIXED | 100 B | | |
| VR014 | RN14BK2C1000F | RES. METAL FILM | 100 | 1% | 1/6W |
| VR015 | RN14BK2C1301F | RES. METAL FILM | 1.3K | 1% | 1/6W |
| VR101 | R05-3509-05 | V.R. | 20K B | | |
| VR102 | R12-3541-05 | RES. SEMI FIXED | 20K B | | |
| VR103 | R12-0565-05 | RES. SEMI FIXED | 100 B | | |
| VR104 | R12-0567-05 | RES. SEMI FIXED | 500 B | | |
| VR105 | R12-3541-05 | RES. SEMI FIXED | 20K B | | |
| VR114 | RN14BK2C1000F | RES. METAL FILM | 100 | 1% | 1/6W |
| VR115 | NO USE | | | | |
| VR116 | RN14BK2C1301F | RES. METAL FILM | 1.3K | 1% | 1/6W |

# SCHEMATIC DIAGRAM (CS-1022)



# SCHEMATIC DIAGRAM (CS-1021)



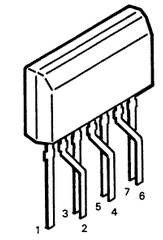

| | | | |
|---|---|---|---|
| (X75-1160-00) | D1,2 MTZ8.2JC | U1 : μPA71A | |
| Q1 : 2SK30A(O) | | U2 : 2SA1349(GR) | |
| Q2,3 : 2SA1005(K) | | U3 : 2SK389(GR) | |
| Q4,5 : 2SC2786(K) | | | |

| | | | |
|---|---|---|---|
| (X77-1261-61) | | | |
| Q1 : 2SC1364 | | | |
| Q2 : 2SA684 | | | |
| D1,2 : DS442K | | | |
| U1 : NJM4558D | | | |

| | | | |
|---|---|---|---|
| Q3,5,102,103 | : 2SA1005(K) | D1,101~107,306,308 | : DS442K |
| Q4,6~14,104,105, 107~112,115 | : 2SC2786(K) | D301,302 | : S2V8407 |
| Q15,16 | : 2SC2407 | D303,304 | : S1VB60 |
| Q106,114 | : 2SC2785(F) | D307 | : VO6B |
| Q113,303,304 | : 2SA1175(F) | D108 | : MTZ10JC |
| Q301,302 | : 2SA1009(L,K) | U1,101 | : 2SK389(GR) |
| Q305,306 | : 2SC2271(E) | U301 | : μPC7906H |
| | | U303 | : μPC7915HA |
| | | U303 | : NJM7815 |
| | | U304 | : NJM4558D |

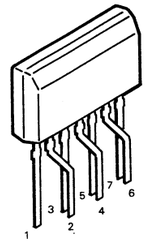
| | | | |
|---|---|---|---|
| (X74-1340-04) | | | |
| U1 | | : NJM4558D | |
| U101 | | : MC10105L | |
| U102 | | : SN74LS112N | |
| U103 | | : SN74LS02N | |
| U104 | | : SN74LS00N | |
| U105 | | : SN74LS08N | |
| Q1,124,127 | | : 2SC2912(S) | |
| Q2,125 | | : 2SA1201(S) | |
| Q3 | | : 2SD613(E) | |
| Q4,103~106,113,114,116~120,126,128,129 | | : 2SC2785(F) | |
| Q5 | | : 2SC2271(D) | |
| Q101,102,115 | | : 2SK117(Y) | |
| Q107,108,111,112,121~123 | | : 2SA1175(F) | |
| Q109,110 | | : 2SA838(C) | |
| NL1,2 | | : NE-28 | |
| D1,2,8,9,101,103~113,115,121,124,125 | | : DS442K | |
| D4,5 | | : W06C | |
| D6,7,116,123 | | : 1S953 | |
| D117 | | : MTZ5.1JB | |

**2SK389 (GR)**



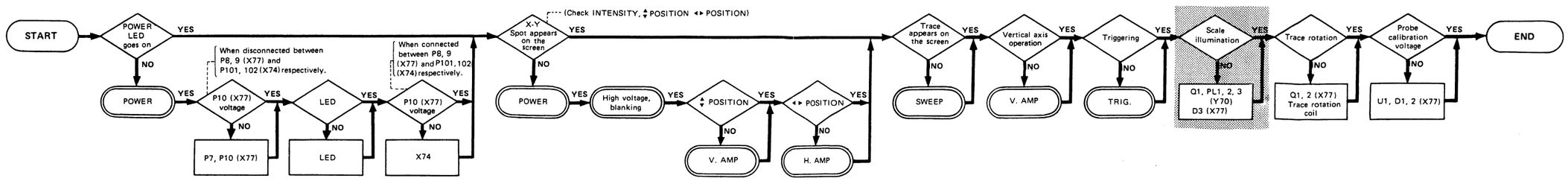
| Pin No. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| Name | D1 | G1 | S1 | Sub | S2 | G2 | D2 |

**2SA1349 (GR, BL)**



| Pin No. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| Name | B1 | C1 | E1 | Sub | E2 | C2 | B2 |

# TROUBLESHOOTING




**Note:**

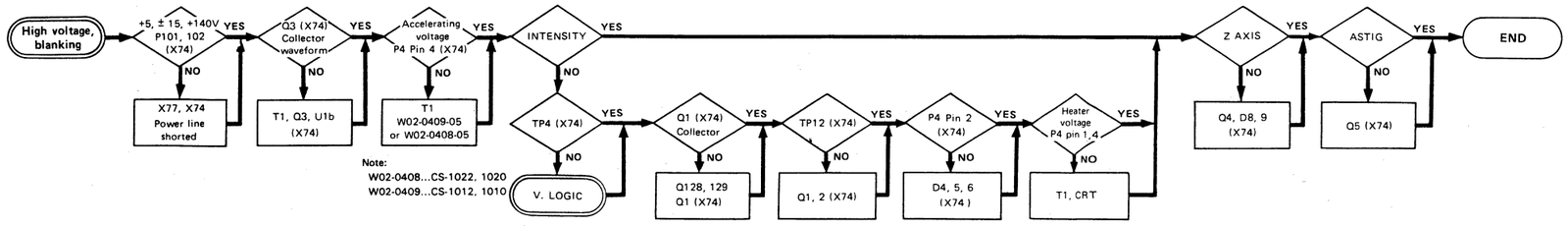
Index:

Y70 .... Main shassis
X73 .... X73-1490
X74 .... X74-1340
X75 .... X75-1140
X77 .... X77-1260

Check and judgement

Malfunction

Item



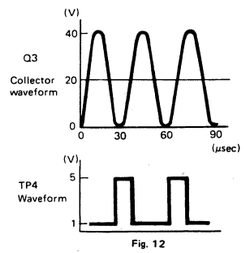




Fig. 12

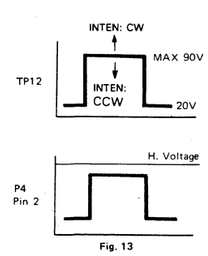
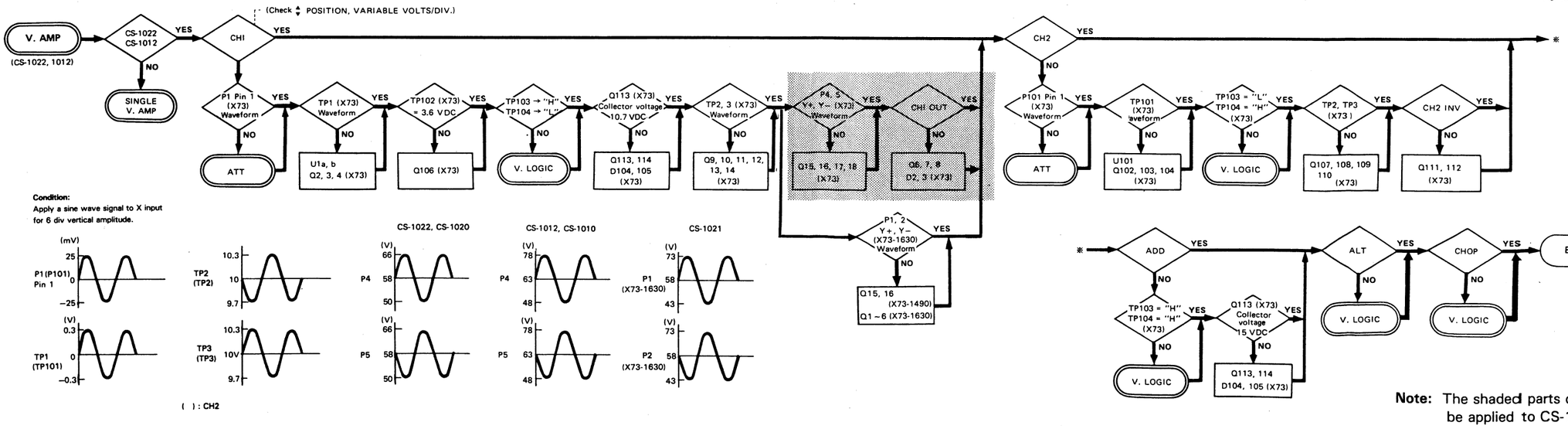



Fig. 13



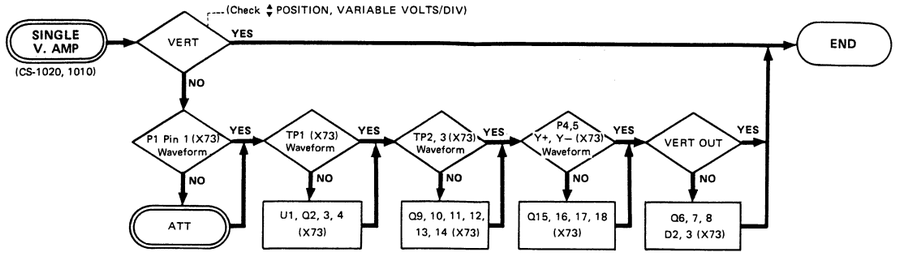

**Condition:**
Apply a sine wave signal to X input for 6 div vertical amplitude.



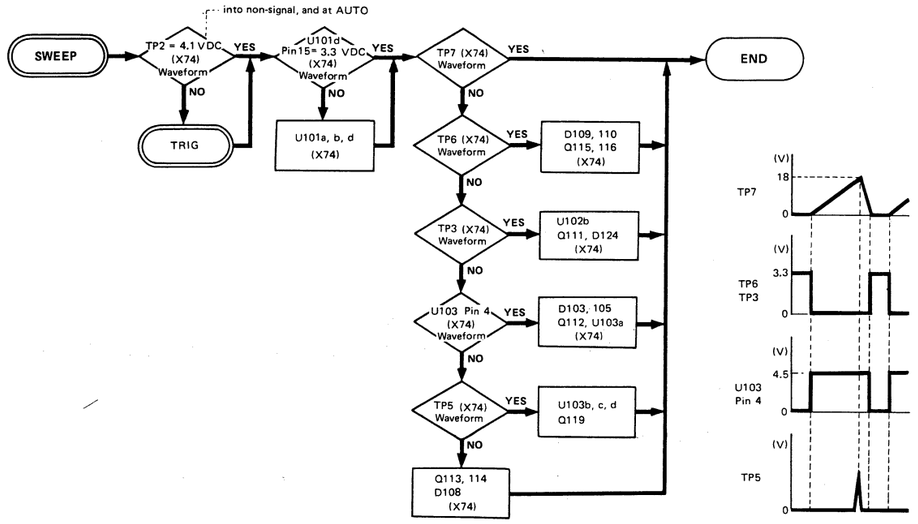

( ) : CH2

**Note:** The shaded parts cannot be applied to CS-1021.

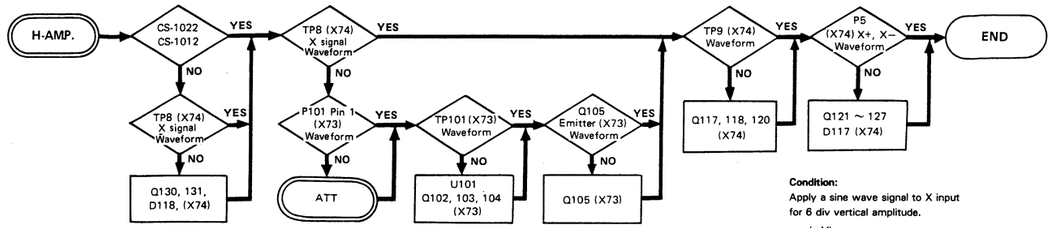
# TROUBLESHOOTING

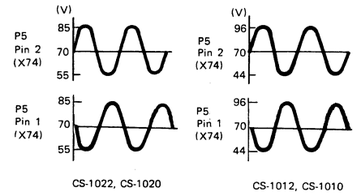



**Note:**
Waveforms of P1, Pin 1, TP1, TP2 and TP3, are same as CH1 V. AMP.




Waveform at auto free-run.



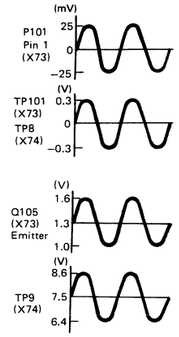



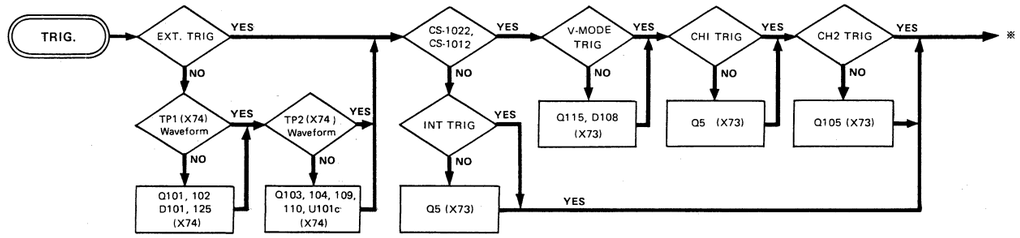

CS-1022, CS-1020

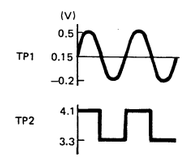



CS-1012, CS-1010

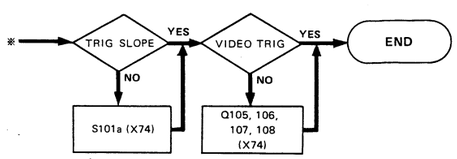
**Condition:**
Apply a sine wave signal to X input for 6 div vertical amplitude.

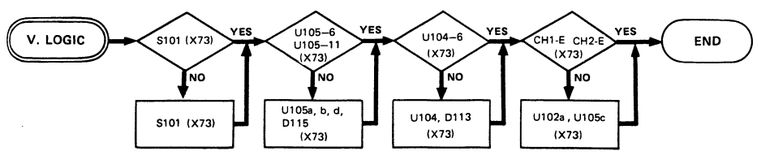



Waveform which synchronized at the center of the signal when applied a sine wave signal for 6 div.

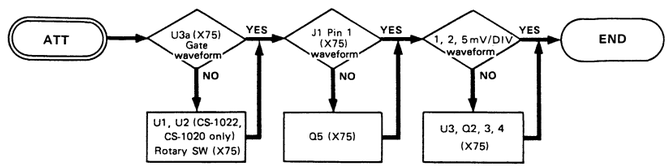



**Note:** Check the signal reffer to table right.

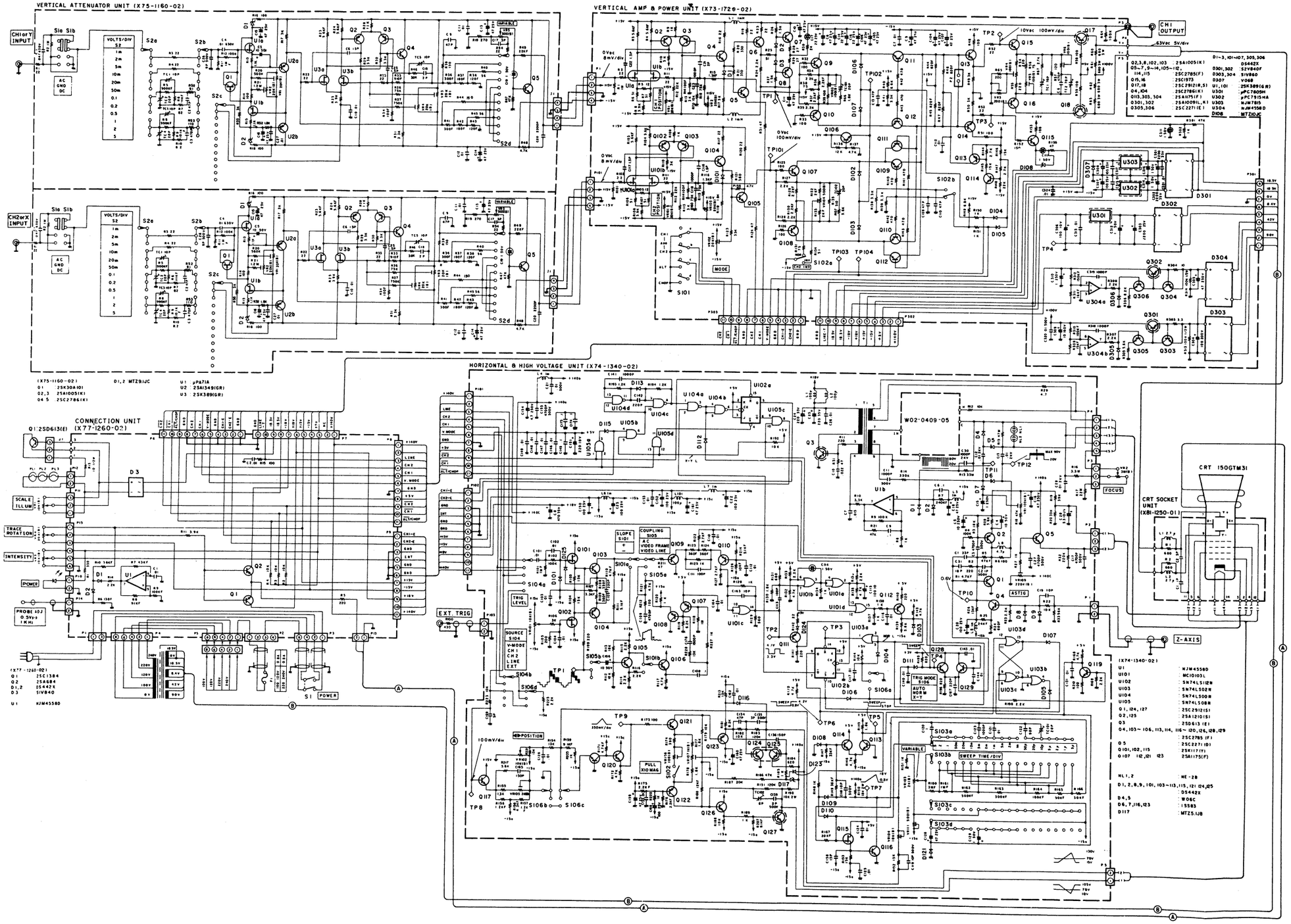
| TEST POINT / MODE | P303 (X73) ⑩ CH1 | P303 (X73) ⑪ CH2 | P303 (X73) ⑨ ALT Chop | U105 (X74) Pin.6 | U105 (X74) Pin.11 | U104 Pin 8 | U104 Pin 6 | P102 (X74) CH1-E ① | P102 (X74) CH2-E ② |
|---|---|---|---|---|---|---|---|---|---|
| CH1 | L | H | H | L | L | H | | H | L |
| CH2 | H | L | H | L | H | H | | L | H |
| ADD | L | L | H | L | L | H | | H | H |
| ALT | H | H | L | L | H | H | | CH1 SWEEP | CH2 SWEEP |
| CHOP | H | H | H | H | H | | | | |
| X-Y | – | – | – | L | L | H | H | H | L |

SWEEP

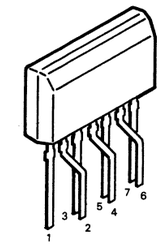



**Note:**
Waveforms of U3 gate and J1 Pin 1 are same as P1 Pin. 1 of CH1 V. AMP. (at 10 mV/div range)

# SCHEMATIC DIAGRAM (CS-1012)

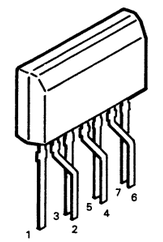



## 2SK389 (GR)



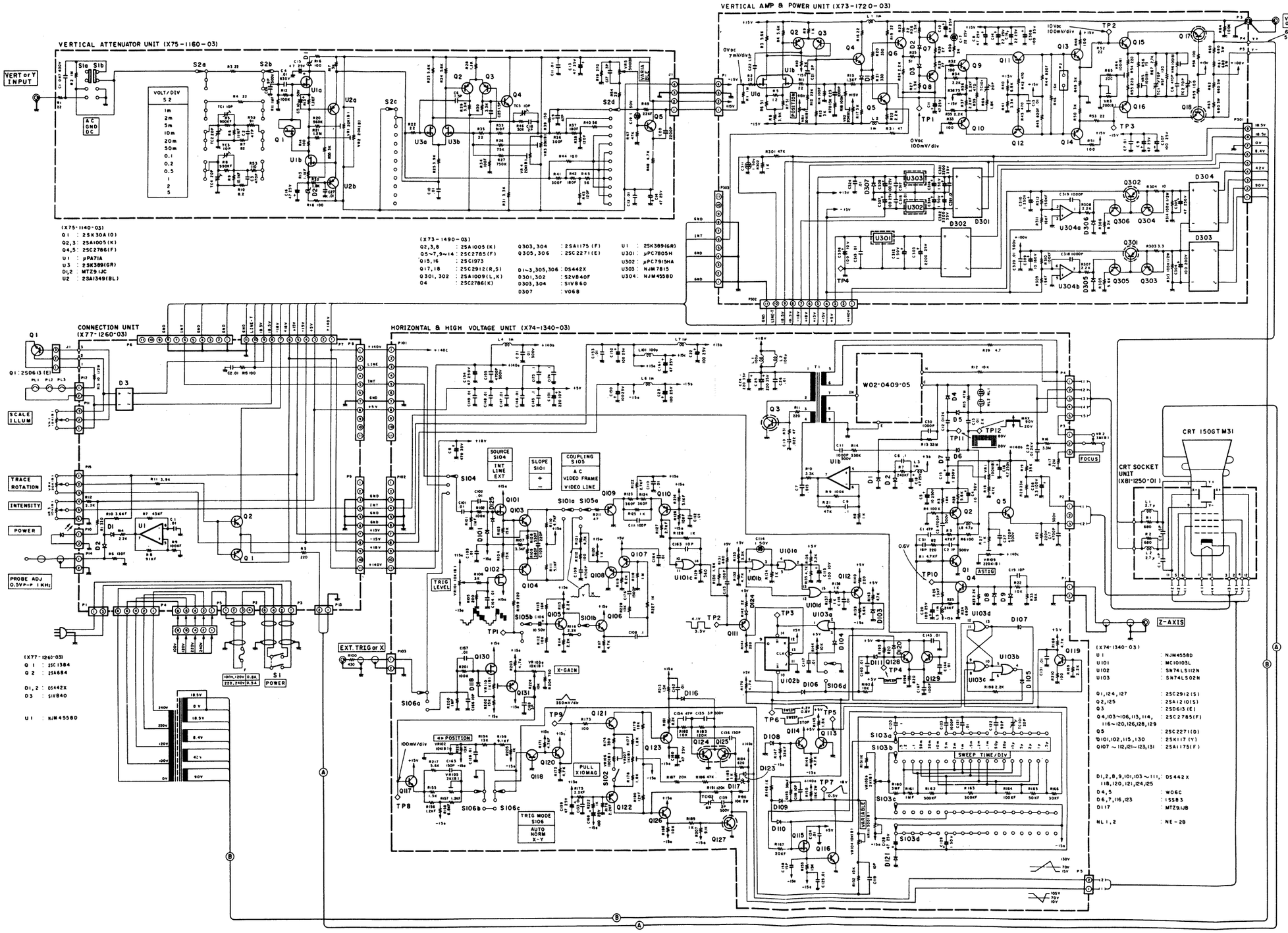
| Pin No. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| Name | D1 | G1 | S1 | Sub | S2 | G2 | D2 |

## 2SA1349 (GR, BL)

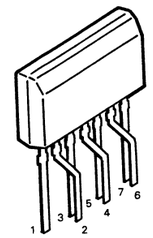


| Pin No. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| Name | B1 | C1 | E1 | Sub | E2 | C2 | B2 |

# SCHEMATIC DIAGRAM (CS-1010)

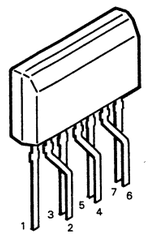



## 2SK389 (GR)



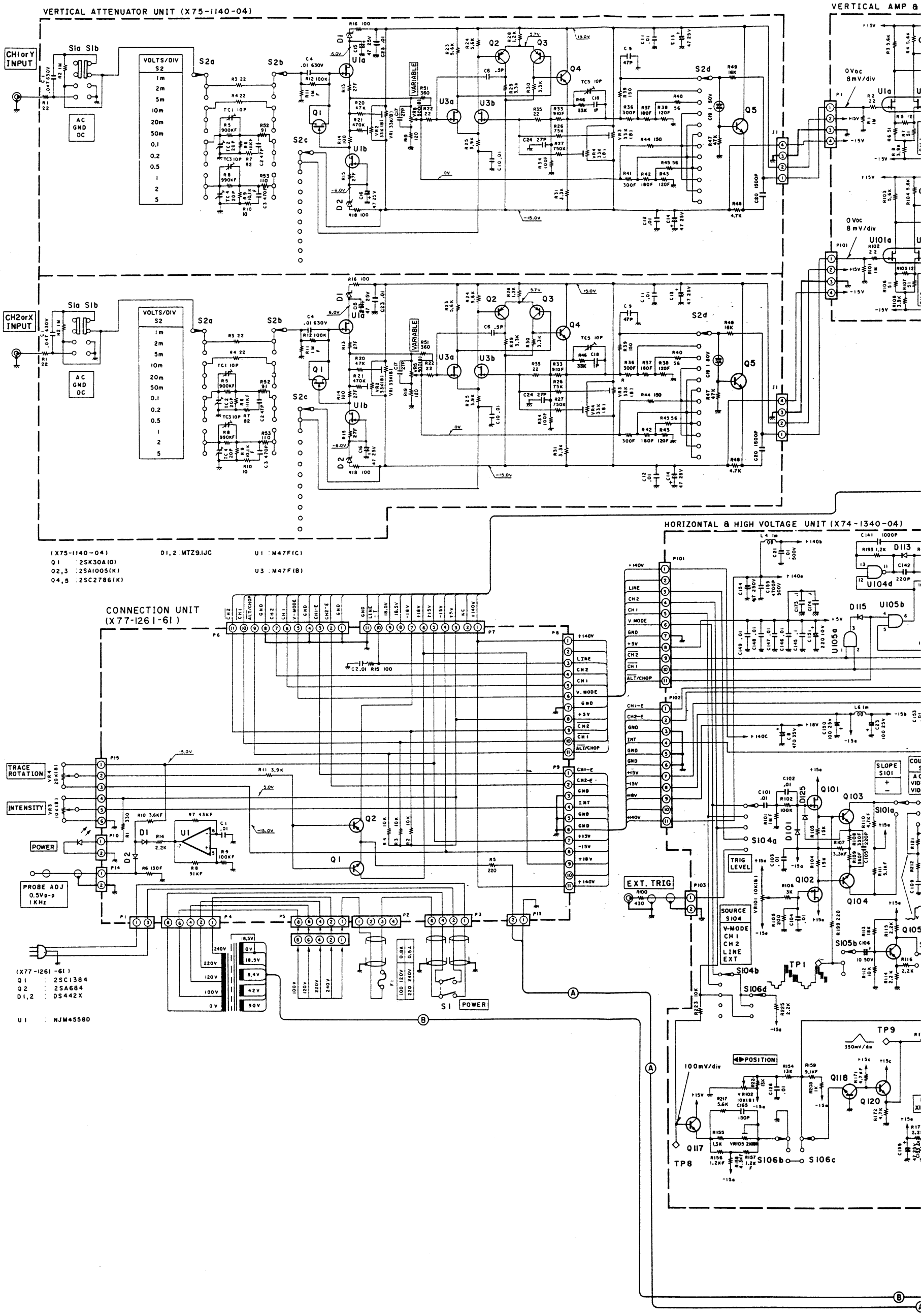
| Pin No. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| Name | D1 | G1 | S1 | Sub | S2 | G2 | D2 |

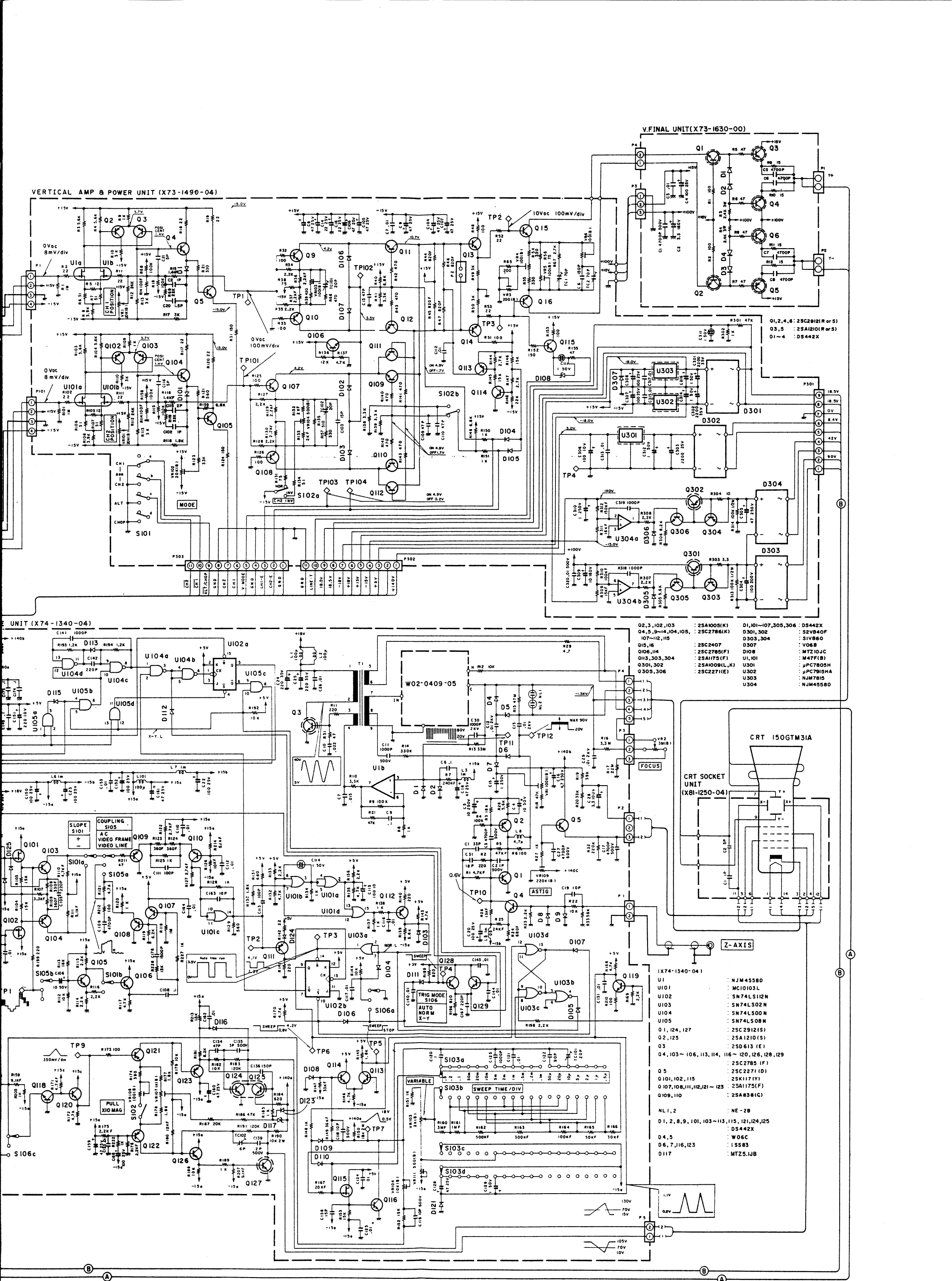
## 2SA1349 (GR, BL)



| Pin No. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| Name | B1 | C1 | E1 | Sub | E2 | C2 | B2 |

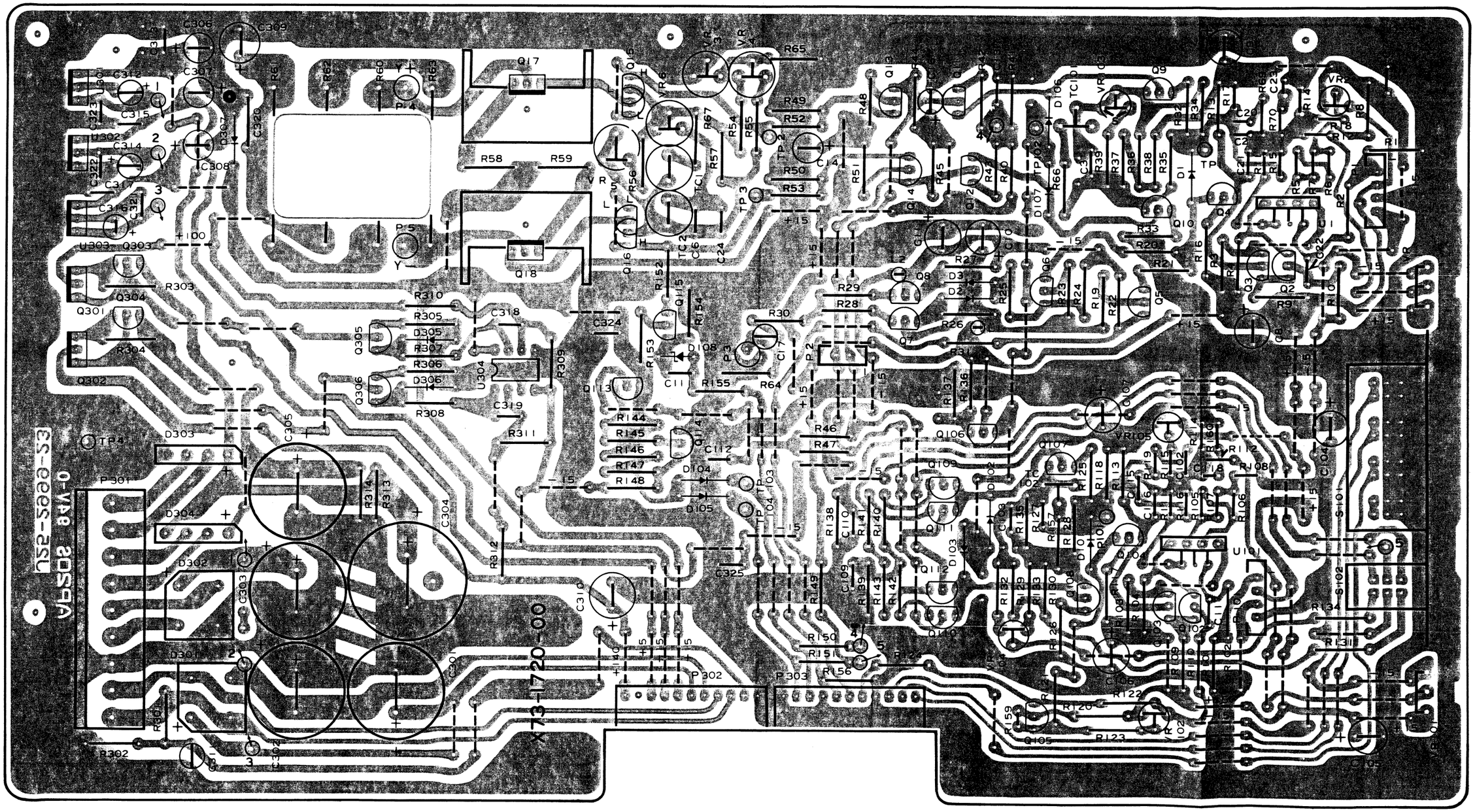
# CS-1021 SCHEMATIC DIAGRAM




V.FINAL UNIT(X73-1630-00)
VERTICAL AMP & POWER UNIT (X73-1490-04)
Q1,2,4,6 : 2SC2912(R or S)
Q3,5 : 2SA1210(R or S)
D1~4 : DS442X
Q2,3,102,103 : 2SA1005(K)
Q4,5,9~14,104,105, 107~112,115 : 2SC2786(K)
Q15,16 : 2SC2407
Q106,114 : 2SC2785(F)
Q113,303,304 : 2SA1175(F)
Q301,302 : 2SA1009(L,K)
Q305,306 : 2SC2271(E)
D1,101~107,305,306 : DS442X
D301,302 : S2VB40F
D303,304 : S1VB60
D307 : V06B
D108 : MTZ10JC
U1,101 : M47F(B)
U301 : μPC7805H
U302 : μPC7915HA
U303 : NJM7815
U304 : NJM4558D
UNIT (X74-1340-04)
W02-0409-05
CRT 150GTM31A
CRT SOCKET UNIT (X81-1250-04)
FOCUS
ASTIG
Z-AXIS
(X74-1340-04)
U1 : NJM4558D
U101 : MC10103L
U102 : SN74LS112N
U103 : SN74LS02N
U104 : SN74LS00N
U105 : SN74LS08N
Q1,124,127 : 2SC2912(S)
Q2,125 : 2SA1210(S)
Q3 : 2SD613(E)
Q4,103~106,113,114,116~120,126,128,129 : 2SC2785(F)
Q5 : 2SC2271(D)
Q101,102,115 : 2SK117(Y)
Q107,108,111,112,121~123 : 2SA1175(F)
Q109,110 : 2SA838(C)
NL1,2 : NE-28
D1,2,8,9,101,103~113,115,121,124,125 : DS442X
D4,5 : W06C
D6,7,116,123 : 1SS83
D117 : MTZ5.1JB

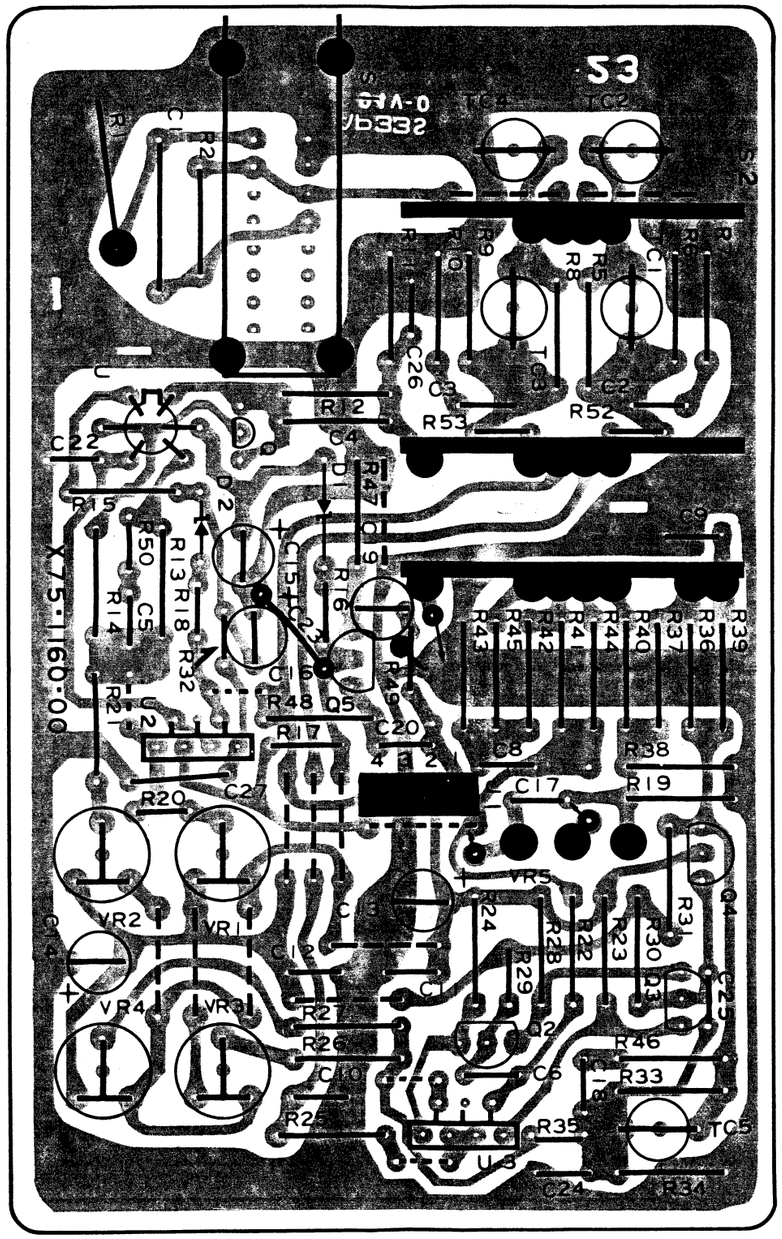
# P.C. BOARD

**VERTICAL AMP & POWER UNIT (X73-1720-00) (CS-1022)**
**(X73-1720-02) (CS-1012)**
**(X73-1720-03) (CS-1010)**
**(X73-1720-04) (CS-1021)**



# P.C. BOARD

**VERTICAL ATTENUATOR UNIT (X75-1160-00) (CS-1022, 1021)**
**(X75-1160-02) (CS-1012)**
**(X75-1160-03) (CS-1010)**



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KENWOOD CORPORATION
17-5, 2-chome, Shibuya, Shibuya-ku, Tokyo 150, Japan

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